

# INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

FOR THE

## VALENCIA APARTMENTS PROJECT

MARCH 2019

*Prepared for:*

City of Manteca – City Hall  
1001 West Center Street  
Manteca, CA 95337  
(209) 456-8000

*Prepared by:*

De Novo Planning Group  
1020 Suncast Lane, Suite 106  
El Dorado Hills, CA 95762  
(916) 949-3231

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

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A Land Use Planning, Design, and Environmental Firm





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# Proposed Mitigated Negative Declaration for the Valencia Apartments Project

**Lead Agency:**

City of Manteca  
1001 West Center Street  
Manteca, CA 95337

**Project Title:** Valencia Apartments

**Project Location:** The Valencia Apartments project site (project site) includes approximately 19.58 acres located in the south-central portion of the City of Manteca, south of State Route (SR) 120, in San Joaquin County, California. The site is identified by the following San Joaquin County Assessor's Parcel Numbers (APNs): 224-021-14 (0.79 acres), and 224-021-15 (18.79 acres). The site is bound by SR 120 to the north, undeveloped agricultural land to the east, W. Atherton Drive to the south, and Lakeside Avenue to the west. Surrounding land uses include SR 120 and single-family residential uses to the north, agricultural land (fields and orchards), and an SR 120 off-ramp to the east, W. Atherton Drive and existing and future single-family residential uses to the south, and Lakeside Avenue, existing and future commercial and retail uses (including, but not limited to, Bass Pro Shops, Hampton Inn & Suites, and AMC Showplace), and associated parking lots to the west.

**Project Description:** The proposed project includes development of 428 multifamily residential units, associated amenities, and infrastructure improvements on the 19.58-acre project site.

The 428 residential units would be located within 18 separate buildings throughout the site. Each of the 18 buildings would contain 16 to 42 units. The project would include a total of 42 studio units, 140 one bedroom and one bathroom units, 222 two bedroom and two bathroom units, and 24 three bedroom and two bathroom units. The studio units would have approximately 515 square feet (sf) of living space, the one bedroom units would have approximately 722 sf of living space, the two bedroom units would have 1,040 sf to 1,105 sf of living space, and the three bedrooms would have 1,279 sf of living space.

The proposed amenities include two community centers, two pools, two associated pool buildings, two family areas/tot lots, and two dog parks. The project would be served by existing City water, sewer, and storm drainage infrastructure. The project proposes to include two drainage basins: a basin in the northern half of the site (with 2.38 ac-ft of storage potential in the basin and 0.34-ac-ft of storage potential in the bio-retention area), and another basin in the southern half of the site (with 2.41-ac-ft of storage potential in the basin and 0.37-ac-ft of storage potential in the bio-retention area). Two primary access points are proposed by the project: one southern entrance off W. Atherton Drive, opposite of Tinnin Road, and one western entrance off Lakeside Avenue. Two resident exit only accesses with vehicle gates would also be located off Lakeside Avenue, north and south of the proposed primary access on Lakeside Avenue. Additionally, the project would provide a total of 760 parking spaces, including 96 garage spaces and 428 carport spaces. Carports and garages would be located throughout the site and along the project site perimeter.

**Findings:**

In accordance with the California Environmental Quality Act, the City of Manteca 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 Manteca staff. On the basis of the Initial Study, the City of Manteca 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.

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Signature

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Date

## **Proposed Mitigation Measures:**

The following Mitigation Measures 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. A Mitigation Monitoring and Reporting Program (MMRP) is an integral part of project implementation to ensure that mitigation is properly implemented by the City and the implementing agencies. The MMRP will describe actions required to implement the appropriate mitigation for each CEQA category including identifying the responsible agency, program timing, and program monitoring requirements. 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 mitigation measures presented below.

### **AGRICULTURAL RESOURCES**

**Mitigation Measure AG-1:** Prior to the conversion of important farmland on the project site, the project applicant shall participate in the City's agricultural mitigation fee program by paying the established fees on a per-acre basis for the loss of important farmland. Fees paid toward the City's program shall be used to fund conservation easements on comparable or better agricultural lands to provide compensatory mitigation.

### **AIR QUALITY**

**Mitigation Measure AIR-1:** Prior to the commencement of construction activities for each phase of the project, the project proponent shall prepare and submit a Dust Control Plan that meets all of the applicable requirements of APCD Rule 8021, Section 6.3, for the review and approval of the APCD Air Pollution Control Officer.

**Mitigation Measure AIR-2:** During all construction activities, the project proponent shall implement dust control measures, as required by APCD Rules 8011-8081, to limit Visible Dust Emissions to 20% opacity or less. Dust control measures shall include application of water or chemical dust suppressants to unpaved roads and graded areas, covering or stabilization of transported bulk materials, prevention of carryout or trackout of soil materials to public roads, limiting the area subject to soil disturbance, construction of wind barriers, access restrictions to inactive sites as required by the applicable rules.

**Mitigation Measure AIR-3:** During all construction activities, the project proponent shall implement the following dust control practices identified in Tables 6-2 and 6-3 of the GAMAQI (San Joaquin Valley APCD, 2002).

- a. All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.
- b. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- c. All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall control fugitive dust emissions by application of water or by presoaking.
- d. When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained.
- e. All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations 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. Use of blower devices is expressly forbidden.
- f. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- g. Limit traffic speeds on unpaved roads to 5 mph; and
- h. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.

**Mitigation Measure AIR-4:** Architectural coatings applied to all structures in the project site shall meet or exceed volatile organic compound (VOC) standards set in APCD Rule 4601. The project applicant shall submit to the APCD a list of architectural coatings to be used and shall indicate how the coatings meet or exceed VOC standards. If the APCD determines that any architectural coatings do not meet VOC standards, the project applicant shall replace the identified coatings with those that meet standards.

**Mitigation Measure AIR-5:** Asphalt paving shall be applied in accordance with APCD Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

**Mitigation Measure AIR-6:** Prior to final approval of improvement plans for each phase of the project, the project proponent shall submit an Air Impact Assessment (AIA) application to the San Joaquin Valley Air Pollution Control District for District Rule 9510 Indirect Source Review (ISR) to obtain AIA approval from the District for the phase or project component that is to be constructed. Prior to the issuance of a building permit of each individual phase or project component, the Project proponent shall incorporate mitigation measures into the proposed project and demonstrate compliance with District Rule 9510 including payment of all fees.

#### BIOLOGICAL RESOURCES

**Mitigation Measure BIO-1:** Prior to commencement of any grading activities, the project proponent shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species.

**Mitigation Measure BIO-2:** Prior to the approval of improvement plans, the applicant shall provide a landscape plan that includes tree planting specifications established by the Manteca Municipal Code (17.19.060) for the replacement of any trees, excluding orchard and non-native trees, to be removed at a ratio of 1:1. Replacement trees shall be planted on-site at a location that is agreeable to the City.

#### CULTURAL RESOURCES

**Mitigation Measure CUL-1:** If cultural resources (i.e., prehistoric sites, historic sites, isolated artifacts/features, and paleontological sites) are discovered, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Manteca shall be notified, and a qualified archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology (or a qualified paleontologist in the event paleontological resources are found) shall be retained to determine the significance of the discovery. The City of Manteca shall consider recommendations presented by the professional for any unanticipated discoveries and shall carry out the measures deemed feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. Specific measures are developed based on the significance of the find.

**Mitigation Measure CUL-2:** If any human remains are found during grading and construction activities, all work shall be halted immediately within 50 meters (165 feet) of the discovery and the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed. Additionally, if the Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the applicant's expense.

#### GEOLOGY AND SOILS

**Mitigation Measure GEO-1:** Prior to issuance of any building permits, the developer shall be required to submit building plans to the City of Manteca for review and approval. The building plans shall also comply with all applicable requirements of the most recent California Building Standards Code. All on-site soil engineering activities shall be conducted under the supervision of a licensed geotechnical engineer or certified engineering geologist.

**Mitigation Measure GEO-2:** The project applicant shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of

BMPs will be subject to approval by the City of Manteca and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.

#### HYDROLOGY AND WATER QUALITY

**Mitigation Measure HYDRO-1:** The storm drainage plan shall be designed and engineered to ensure that post-project runoff is equal to or less than pre-project runoff. The applicant shall provide the City Engineer with all stormwater runoff calculations with the improvement plan submittal.

#### NOISE

**Mitigation Measure NOI-1:** A sound barrier with a minimum height of 10-feet shall be constructed along the SR 120 right-of-way adjacent to the project site, which is consistent with barrier heights for other projects in the area. A barrier analysis (Appendix A of the noise analysis) indicates that a sound barrier located at the SR 120 right-of-way would provide the following shielding of SR 120 traffic noise levels at the first row of building facades, and the common area of Phase 1:

Barrier Height	Resulting SR 120 Traffic Noise Level	
	@ First Row of Facades	@ Common Area
6-feet	68 dB L <sub>dn</sub> /CNEL	58 dB L <sub>dn</sub> /CNEL
7-feet	68 dB L <sub>dn</sub> /CNEL	57 dB L <sub>dn</sub> /CNEL
8-feet	68 dB L <sub>dn</sub> /CNEL	57 dB L <sub>dn</sub> /CNEL
9-feet	67 dB L <sub>dn</sub> /CNEL	57 dB L <sub>dn</sub> /CNEL
10-feet	67 dB L <sub>dn</sub> /CNEL	57 dB L <sub>dn</sub> /CNEL
11-feet	66 dB L <sub>dn</sub> /CNEL	56 dB L <sub>dn</sub> /CNEL
12-feet	65 dB L <sub>dn</sub> /CNEL	55 dB L <sub>dn</sub> /CNEL

Source: j.c. brennan & associates, 2019.

The sound barrier shall be constructed when Phase 2 of the project is constructed. The sound barrier shall be noted on the project's improvement plans.

**Mitigation Measure NOI-2:** All parallel and perpendicular second floor building facades located within 450 feet of the centerline of SR 120 shall have a minimum sound transmission class (STC) rating of 38. In addition, these facades shall have a minimum of a three-coat stucco exterior, and interior gypsum board installed over resilient channels. As an alternative to this requirement, the applicant may submit a detailed interior noise analysis outlining alternative noise control measures that would ensure compliance with the City of Manteca 45 dB L<sub>dn</sub> interior noise level standard. This analysis shall specify required sound ratings for glazing as well as any other modifications to be the building envelope used to meet the City's interior noise level standard. This analysis shall be prepared by a qualified acoustical consultant. These requirements shall be noted on the project's improvement plans.

#### PUBLIC SERVICES

**Mitigation Measure PUBLIC-1:** The applicant shall pay applicable park in-lieu fees or dedicate parkland in accordance with the City of Manteca Municipal Code standards outlined in Chapter 3.20. Proof of payment of the in-lieu fees shall be submitted to the City Engineer.

#### TRIBAL CULTURAL RESOURCES

**Mitigation Measure TRIBAL-1:** If cultural resources are discovered during project-related construction activities, all ground disturbances within a minimum of 50 feet of the find shall be halted until a qualified professional archaeologist can evaluate the discovery. The archaeologist shall examine the resources, assess their significance, and recommend appropriate procedures to the lead agency to either further investigate or mitigate adverse impacts. If the find is determined by the lead agency in consultation with the Native American tribe traditionally and culturally affiliated with the geographic area of the project site to be a tribal cultural resource and the discovered archaeological resource cannot be avoided, then applicable mitigation measures for the resource shall be discussed with the geographically affiliated tribe. Applicable mitigation measures that also take into account the cultural values and meaning of the discovered tribal cultural resource, including confidentiality if requested by the tribe, shall be completed (e.g., preservation in place, data recovery program pursuant to PRC §21083.2[i]). During evaluation or mitigative treatment, ground disturbance and construction work could continue on other parts of the project site.



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## INITIAL STUDY CHECKLIST

### PROJECT TITLE

Valencia Apartments

### LEAD AGENCY NAME AND ADDRESS

City of Manteca – City Hall  
1001 West Center Street  
Manteca, CA 95337  
(209) 456-8000

### CONTACT PERSON AND PHONE NUMBER

Boyce Resources  
1309 Mirassou Drive  
Manteca, CA 95336  
(209) 239-4014  
albertboyce@gmail.com

### PROJECT LOCATION AND SETTING

The Valencia Apartments project site (project site) includes approximately 19.58 acres located in the south-central portion of the City of Manteca, south of State Route (SR) 120, in San Joaquin County, California. The site is identified by the following San Joaquin County Assessor's Parcel Numbers (APNs): 224-021-14 (0.79 acres), and 224-021-15 (18.79 acres). The site is bound by SR 120 to the north, undeveloped agricultural land to the east, W. Atherton Drive to the south, and Lakeside Avenue to the west. Surrounding land uses include SR 120 and single-family residential uses to the north, agricultural land (fields and orchards), and an SR 120 off-ramp to the east, W. Atherton Drive and existing and future single-family residential uses to the south, and Lakeside Avenue, existing and future commercial and retail uses (including, but not limited to, Bass Pro Shops, Hampton Inn & Suites, and AMC Showplace), and associated parking lots to the west.

The project site is currently vacant and undeveloped. An existing agricultural ditch is located in the southern portion of the site adjacent to the off-site orchard areas. Existing trees are located along the western project site boundary, and a few additional trees can be found internal to the site and along the northern project site boundary. The project site is generally flat at an elevation of approximately 34 to 38 feet above sea level.

See Figures 1 and 2 for the regional location and the project vicinity. See Figure 3 for an aerial view of the project area.

### PROJECT DESCRIPTION

The proposed project includes development of 428 multifamily residential units, associated amenities, and infrastructure improvements on the 19.58-acre project site. The project site plan is shown on Figure 4. Each project component is discussed in detail below.

## Residential

The 428 residential units would be located within 18 separate buildings throughout the site. Table 1 summarizes the unit types per building. As shown in the table, each of the 18 buildings would contain 16 to 42 units. The project would include a total of 42 studio units, 140 one bedroom and one bathroom units, 222 two bedroom and two bathroom units, and 24 three bedroom and two bathroom units. The studio units would have approximately 515 square feet (sf) of living space, the one bedroom units would have approximately 722 sf of living space, the two bedroom units would have 1,040 sf to 1,105 sf of living space, and the three bedrooms would have 1,279 sf of living space.

**Table 1: Summary of Unit Types Per Building**

Building	Unit Type				Total Units
	Studio	1 bed / 1 bath	2 bed / 2 bath	3 bed / 2 bath	
A	0	0	16	0	16
B	0	8	8	0	16
C	0	12	12	0	24
D	0	0	12	12	24
E	0	12	12	0	24
F	0	12	12	0	24
G	0	0	18	0	18
H	42	0	0	0	42
I	0	12	12	0	24
J	0	12	12	0	24
K	0	12	12	0	24
L	0	0	24	0	24
M	0	12	12	0	24
N	0	0	12	12	24
O	0	12	12	0	24
P	0	12	12	0	24
Q	0	12	12	0	24
R	0	12	12	0	24
<b>TOTALS</b>	<b>42</b>	<b>140</b>	<b>222</b>	<b>24</b>	<b>428</b>

SOURCE: KUCHMAN ARCHITECTS PC, NOVEMBER 29, 2018.

The proposed project would be constructed in two phases: Phase 1 would include construction of the southern half of the project site, and Phase 2 would include construction of the northern half of the project site.

## Amenities

The proposed amenities include two community centers, two pools, two associated pool buildings, two family areas/tot lots, and two dog parks. The community centers would each contain a great room, a fitness room, a flex/game room, a conference room, a demonstration kitchen, an office room, a manager's office, a copy/storage room, a mail room, a janitor room, two restrooms, and a utilities room. Each community center would be 5,374 sf, with an additional 1,510 sf of patio space. The community centers would each be located near the proposed pools. The pool buildings would each contain the pool equipment, two restrooms, a dog wash area, and a bike repair area. Each pool building would be 649 sf, with an additional 39 sf of patio space. The family areas/tot lots would be located adjacent to the community centers and would contain

children's play equipment, outdoor kitchens and seating areas. The dog parks would be located adjacent to the proposed drainage basins and would be fenced.

### **Infrastructure and Access**

The project would be served by existing City water, sewer, and storm drainage infrastructure. The existing City laterals and lines currently located in W. Atherton Drive would be extended into the project site.

As shown in Figure 4, the project proposes to include two drainage basins: a basin in the northern half of the site (with 2.38 acre-feet [ac-ft] of storage potential in the basin and 0.34-ac-ft of storage potential in the bio-retention area), and another basin in the southern half of the site (with 2.41-ac-ft of storage potential in the basin and 0.37-ac-ft of storage potential in the bio-retention area). Additionally, various bio-retention areas and bioswales would be located throughout the project site. Trash compactors and enclosure areas would be located throughout the site and along the project site perimeter.

Access to the site is currently located off of W. Atherton Drive. Two primary access points are proposed by the project: one southern entrance off W. Atherton Drive, opposite of Tinnin Road, and one western entrance off Lakeside Avenue. Two resident exit-only accesses with vehicle gates would also be located off Lakeside Avenue, north and south of the proposed primary access on Lakeside Avenue. Additionally, the project would provide a total of 760 parking spaces, including 96 garage spaces and 428 carport spaces. Carports and garages would be located throughout the site and along the project site perimeter.

### **GENERAL PLAN AND ZONING DESIGNATIONS**

The project site is designated Commercial Mixed Use (CMU) by the Manteca General Plan Land Use Map. The CMU designation accommodates a variety of purposes including high density residential, employment centers, retail commercial, and professional offices. The mixed use concept is intended to integrate a mix of compatible uses on a single site that include sales, services, and activities which residents may need on a daily basis. With pedestrian access, these sites will enable residents to walk or bike for many local trips, instead of driving for convenience trips. The sites may be integrated vertically with mixed uses above one another, such as residential or office uses over a commercial use. Sites may also be mixed horizontally with the uses side-by-side, but linked together through common walkways, plazas and parking areas. In-fill sites in the existing urban area, particularly along the Main Street, Airport Way and Yosemite Avenue corridors may be developed entirely as multi-family residential projects. Sites developed primarily as residential may also include office and retail components. The CMU designation may also be applied to smaller parcels within neighborhoods. These small parcels accommodate a variety of uses, but on a smaller, less intense scale that is compatible with the adjacent residential use. The allowed density within the CMU designation is 15.1 to 25 dwelling units per acre. With 428 units on 19.58 acres, the proposed density would be 21.9 dwelling units per acre, which is within the allowed density range.

The project site is also zoned Mixed Use Commercial (CMU) by the Manteca Zoning Map. The CMU zone accommodates a variety of uses including high-density residential, employment centers, retail commercial, and professional offices.

A General Plan Amendment or rezone would not be required for the project. The existing General Plan and zoning designations are shown on Figure 5.

**REQUESTED ENTITLEMENTS AND OTHER APPROVALS**

The City of Manteca is the Lead Agency for the proposed project, pursuant to the State Guidelines for Implementation of CEQA, Section 15050.

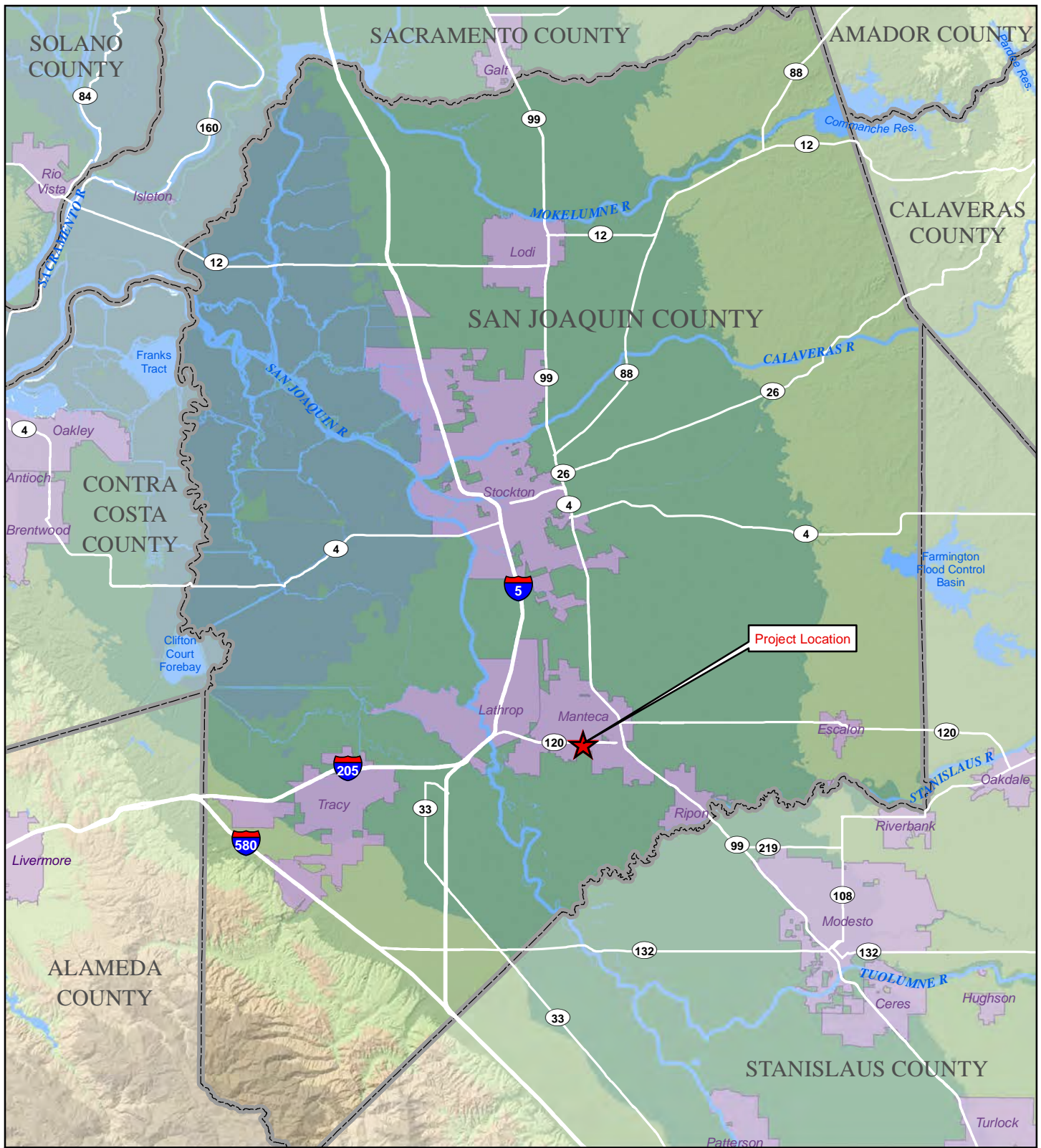
This document will be used by the City of Manteca to take the following actions:

- Adoption of the Mitigated Negative Declaration (MND);
- Adoption of the Mitigation Monitoring and Reporting Program;
- City review and approval of the proposed Grading and Improvement Plans.

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

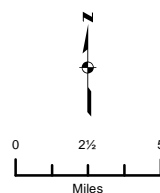
- Regional Water Quality Control Board (RWQCB) – Construction activities would be required to be covered under the National Pollution Discharge Elimination System (NPDES);
- RWQCB – The Storm Water Pollution Prevention Plan (SWPPP) would be required to be approved prior to construction activities pursuant to the Clean Water Act;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) – Approval of construction-related air quality permits;
- San Joaquin Council of Governments (SJCOG) – Review of project application to determine consistency with the San Joaquin County Multi-Species Habitat, Conservation, and Open Space Plan (SJMSCP).





### Legend

- City Area
- County Boundary



### CITY OF MANTECA - VALENCIA APARTMENTS

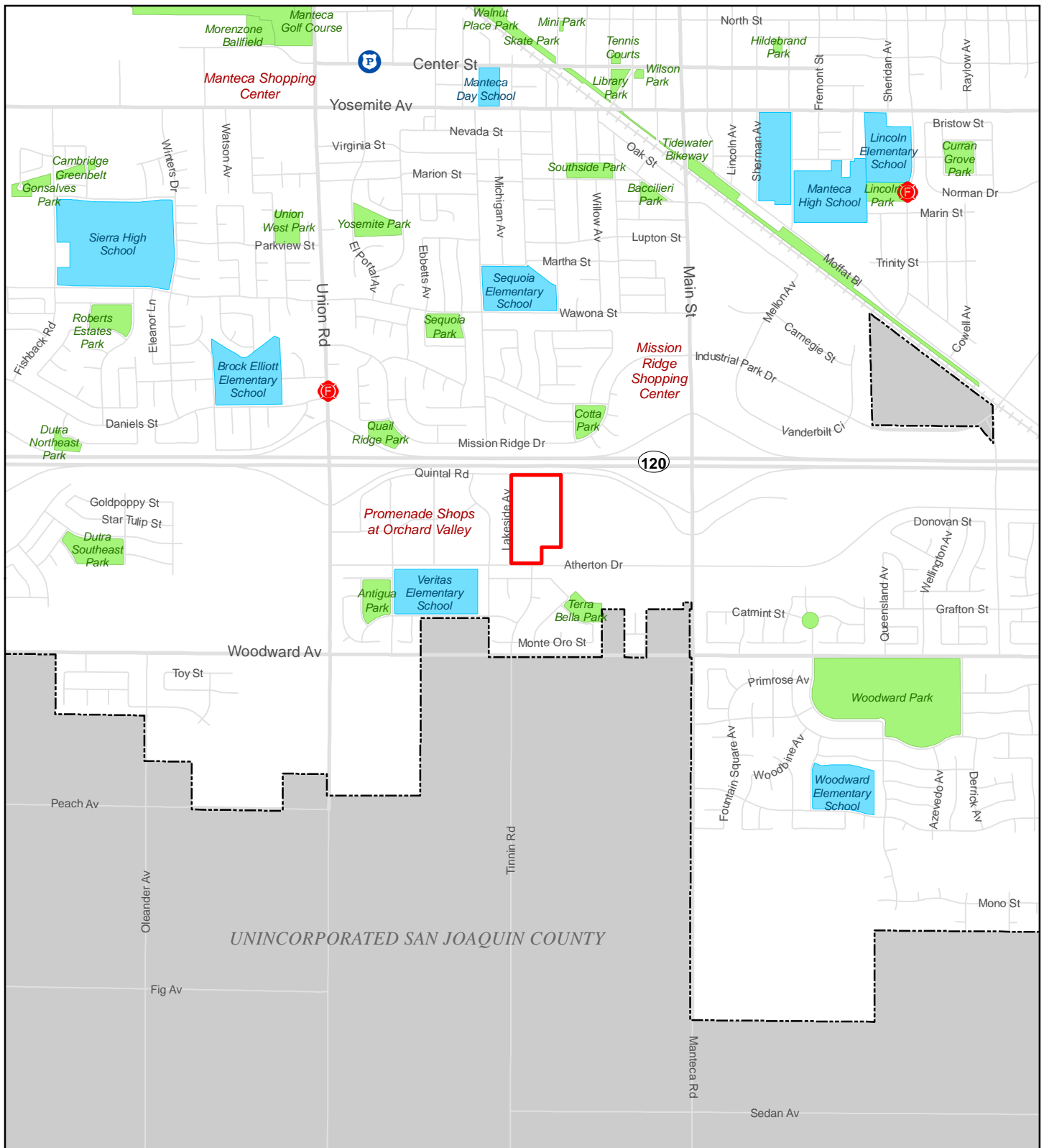
### Figure 1. Regional Location Map

Sources: CalAtlas; Sacramento County; San Joaquin County; Stanislaus County; Alameda County; Contra Costa County. Map date: January 21, 2019.

DeNovo Planning Group  
A Land Use, Planning, Design, and Environmental Firm

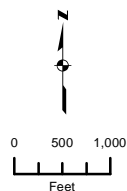
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### Legend

- Project Boundary
- City of Manteca
- School
- Park
- F Fire Station
- P Police Station



### CITY OF MANTECA - VALENCIA APARTMENTS

Figure 2. Vicinity Map

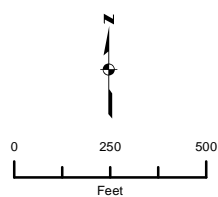
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### Legend

- Project Boundary
- Manteca City Boundary



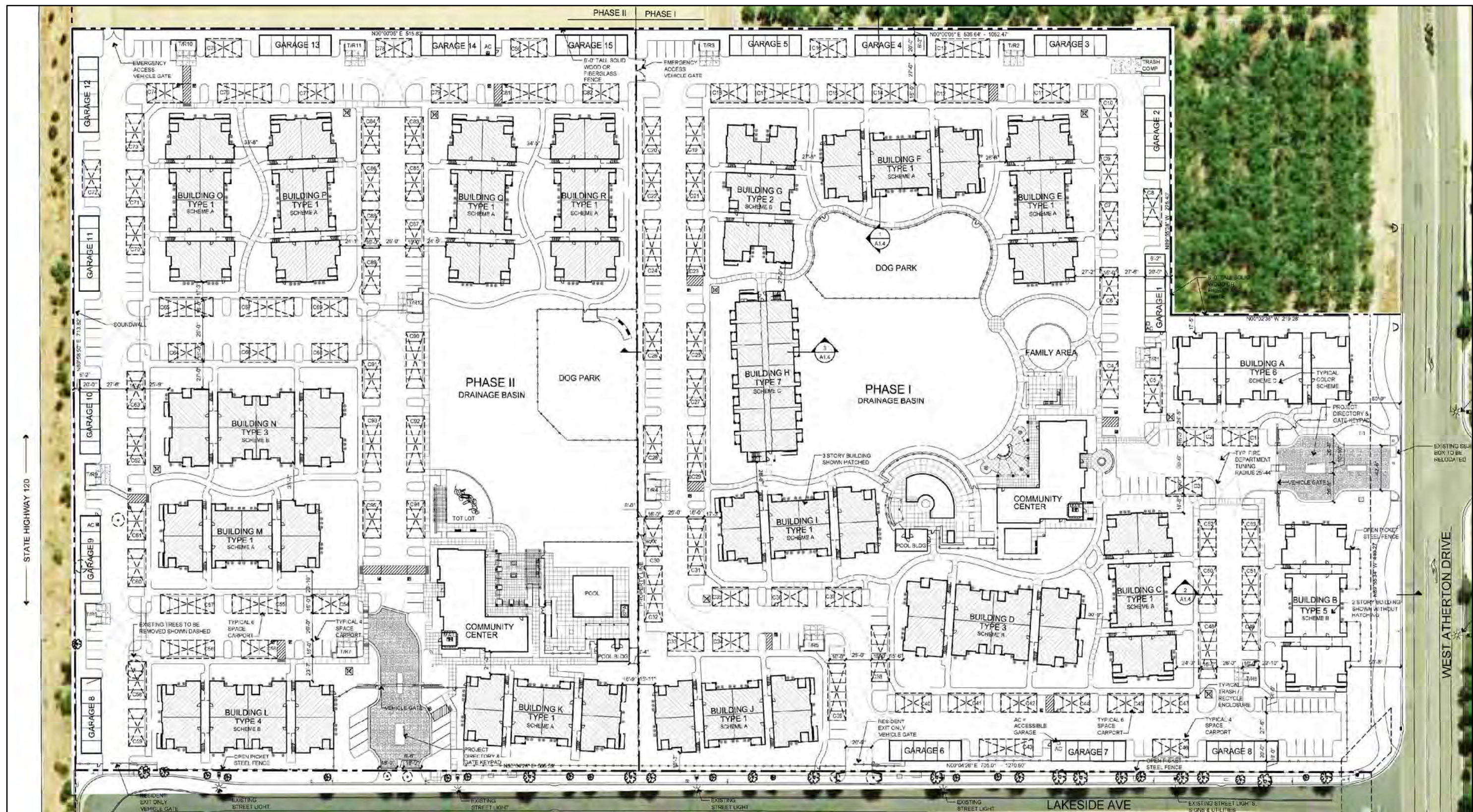
### CITY OF MANTECA - VALENCIA APARTMENTS

Figure 3. Aerial View of Project Site

Sources: San Joaquin County; ArcGIS Online World Imagery Map Service. Map date: January 21, 2019.

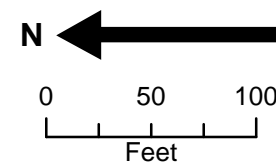
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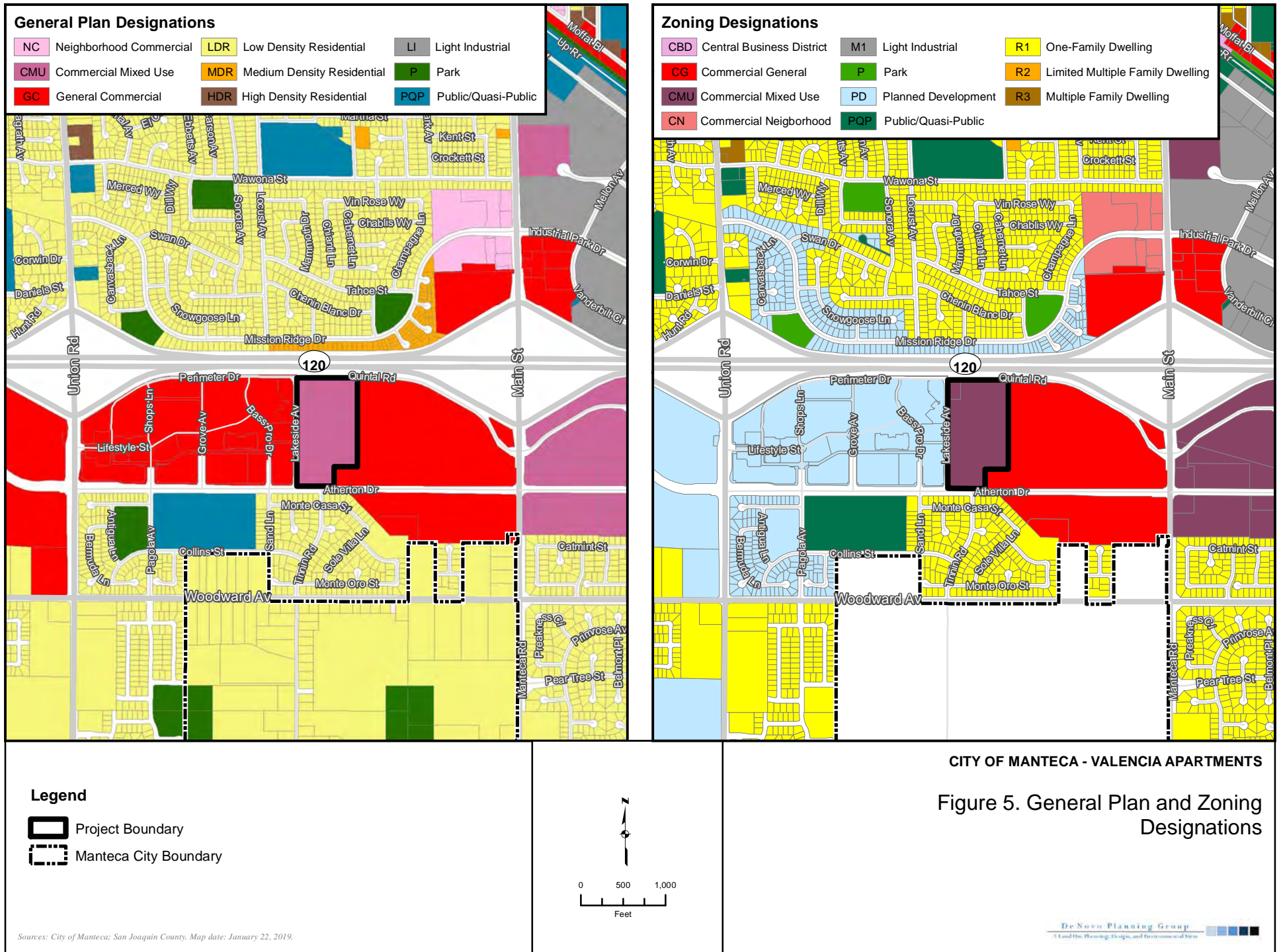
CITY OF MANTECA - VALENCIA APARTMENTS

Figure 4. Site Plan





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## ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

None of the environmental factors listed below would have potentially significant impacts as a result 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

On the basis of this initial evaluation:

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

#### *Responses to Checklist Questions*

**Responses a), c):** The City of Manteca General Plan does not specifically designate any scenic viewsheds within the city. The existing Manteca General Plan does, however, note Manteca's scenic environmental resources including the San Joaquin River environment, and scenic vistas of the Coast Range and the Sierra.

For analysis purposes, a scenic vista can be discussed in terms of a foreground, middleground, and background viewshed. The middleground and background viewshed is often referred to as the broad viewshed. Examples of scenic vistas can include mountain ranges, valleys, ridgelines, or water bodies from a focal point of the forefront of the broad viewshed, such as visually important trees, rocks, or historic buildings. An impact would generally occur if a project would change the view to the middle ground or background elements of the broad viewshed, or remove the visually important trees, rocks, or historic buildings in the foreground.

The proposed project will not significantly disrupt middleground or background views from public viewpoints. The proposed project would result in changes to the foreground views from the public viewpoint by adding apartment buildings to a site that is undeveloped.

Upon build-out, the project would be of similar visual character to nearby and adjacent developments. For motorists travelling along nearby roadways, such as W. Atherton Drive, the

project would appear to be a continuation of adjacent residential land uses and would not present unexpected or otherwise unpleasant aesthetic values within the general project vicinity.

The greatest visual change would apply to neighbors that are located south of W. Atherton Drive with a direct view of the area. Views of the project site are generally visible from immediately adjacent residences, but are obscured by existing fencing and landscaping. Upon development of the project, landscaping would be provided throughout the project site. The proposed landscaping includes a variety of plants and support materials at varying heights that would provide some shielding from existing residences in the vicinity.

The change in character of the project site, once developed, is anticipated by the General Plan and would be visually compatible with surrounding existing commercial uses to the west, and residential uses to the north and south. Setbacks and landscaping around the perimeter of the site will buffer the foreground viewshed from residents in the immediate vicinity. Therefore, implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

**Response b):** The project site is not located within view of a state scenic highway. Only one highway section in San Joaquin County is listed as a Designated Scenic Highway by the Caltrans Scenic Highway Mapping System; the segment of Interstate 580 from Interstate 5 to SR 205. The City of Manteca is not visible from this roadway segment. Therefore, the proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. Implementation of the proposed project would have ***no impact*** relative to this topic.

**Response d):** The project site is currently vacant and undeveloped. The site does not contain existing lighting. There is a potential for the proposed project to create new sources of light and glare. Examples of lighting would include construction lighting, street lighting, security lighting along sidewalks, exterior building lighting, interior building lighting, and automobile lighting. Examples of glare would include reflective building materials and automobiles.

There is a potential for the implementation of the proposed project to introduce new sources of light and glare into the project area. Contributors to light and glare impacts would include construction lighting and street lighting that would create ongoing light impacts to the area. Nighttime construction activities are not anticipated to be required as part of on-site roadway construction. Operational light sources from street lighting may be required to provide for safe travel. All street lighting would have to comply with the City of Manteca lighting standards. Section 17.50.060 of the Manteca Municipal Code identifies general lighting standards for light shielding, illumination levels, and nuisance prevention. Therefore, implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

## 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	

### *Responses to Checklist Questions*

**Response a):** The project site is designated Farmland of Statewide Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. The proposed project would result in the conversion of this designated Farmland of Statewide Importance land to a non-agricultural use. The loss of Important Farmland as classified under the Farmland Mapping and Monitoring Program (FMMP) is considered a potentially significant environmental impact.

The City's agricultural mitigation fee program requires that future development pay the agricultural mitigation fee to mitigate the conversion of agricultural land to urban use. The City will use these funds to purchase conservation easements or deed restrictions on agricultural land to ensure that the land remains in agricultural use in perpetuity. In addition to the City's agricultural mitigation fee program, the SJMSCP requires development to pay fees on a per-acre basis for impacts to agricultural lands that function as habitat for biological resources. SJCOG will then use these funds to purchase the conservation easements on agricultural and habitat lands in the project vicinity. The compensation results in the purchase of conservation easements that are placed over agricultural land. As such, the project fees paid to SJCOG as administrator of the SJMSCP will result in the preservation of agricultural lands in perpetuity.

The purchase of conservation easements and/or deed restrictions through the City agricultural mitigation fee program and the SJMSCP allows the landowners to retain ownership of the land and continue agricultural operations, and preserves such lands in perpetuity.

It is noted that the project site is designated as CMU by the Manteca General Plan Land Use Map. The Manteca General Plan EIR anticipated development of the project site as part of the overall evaluation of the build out of the City. The General Plan EIR addressed the conversion and loss of

agricultural land that would result from the build out of the General Plan (General Plan 2023 Draft EIR, pp. 4-13 through 4-15). The General Plan EIR determined that even with the implementation of mitigation measure AG-1.1, which identifies General Plan goals, policies, and implementation measures LU-P-41, LU-I-1, Goal RC-9, RC-P-18, RC-P-19, and AG-1.2 and directs the major growth area to the Primary Urban Service boundary in a manner that avoids Prime Farmlands where feasible, the impact would be significant and unavoidable. The City subsequently adopted a Statement of Overriding Consideration and certified the General Plan EIR. The proposed project is consistent with the General Plan.

The proposed project will contribute fees toward the purchase of conservation easements on agricultural lands through the City's agricultural mitigation fee program and the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (as required by Mitigation Measure BIO-1). Additionally, the project will contribute fees consistent with the agricultural mitigation fee program (as required by Mitigation Measure AG-1). Because conversion of the project site from agricultural to urban uses was analyzed in the City's General Plan EIR, and because the project will contribute fees through the agricultural mitigation fee program and SJMSCP, implementation of the proposed project would have a ***less than significant*** impact relative to this issue.

*Mitigation Measure(s)*

***Mitigation Measure AG-1:*** *Prior to the conversion of important farmland on the project site, the project applicant shall participate in the City's agricultural mitigation fee program by paying the established fees on a per-acre basis for the loss of important farmland. Fees paid toward the City's program shall be used to fund conservation easements on comparable or better agricultural lands to provide compensatory mitigation.*

**Response b):** The project site is not zoned for agricultural use nor is it 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.

**Response c):** 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.

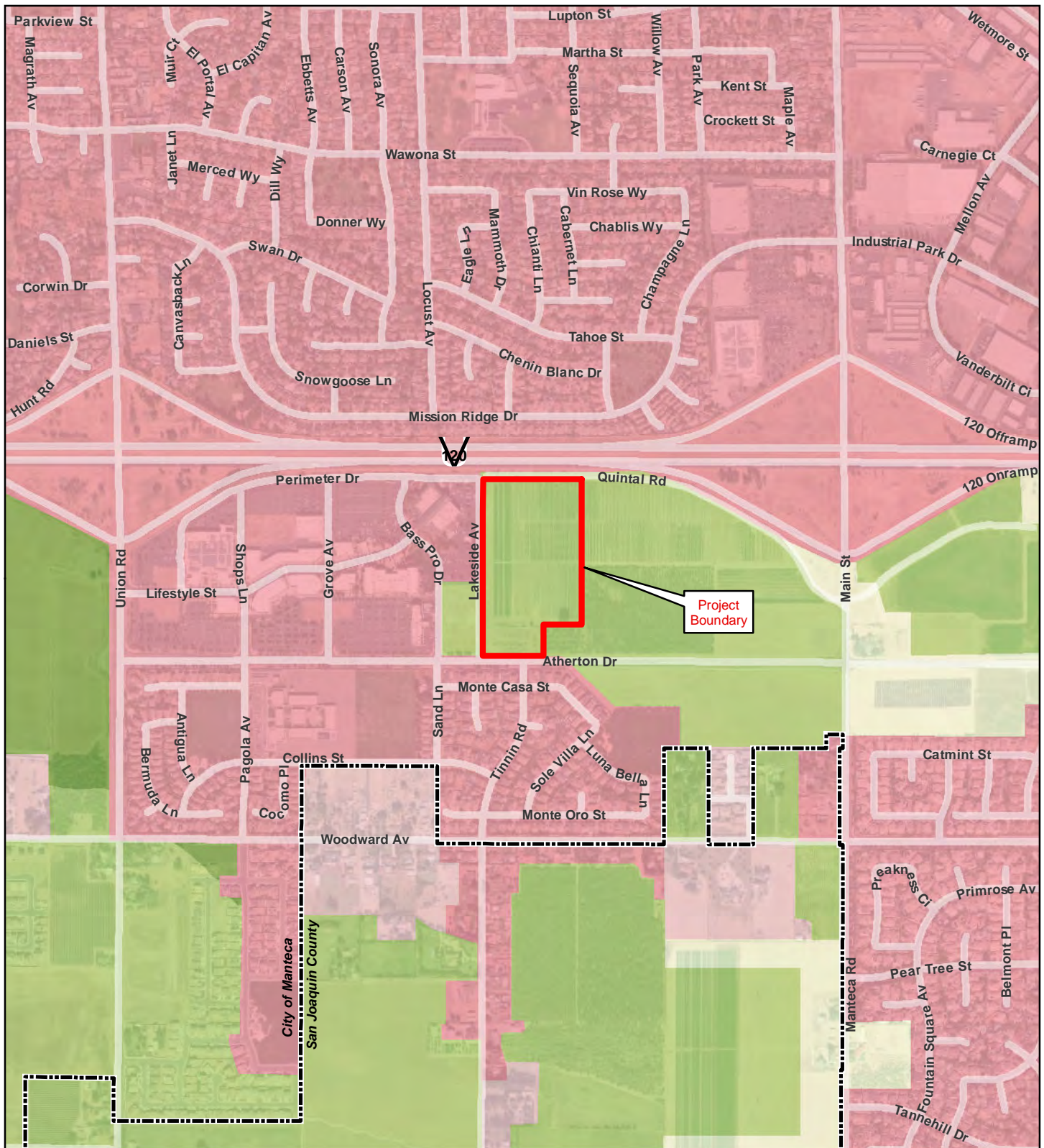
**Response d):** The project site is not forest land. The proposed project would not result in the loss of forest land or conversion of forest land to non-forest use. Implementation of the proposed project would have ***no impact*** relative to this issue.

**Response e):** The project site is currently vacant and undeveloped. The site does not contain forest land, and forest land is not located in the vicinity of the site. The site has previously been used for agricultural purposes. The lands adjacent to the site contain commercial uses and agricultural uses. The agricultural land adjacent east of the site is designated Farmland of Statewide Importance. The land to the east is also designated for General Commercial by the Manteca General Plan land use map. As such, development of the land adjacent east of the site for urban uses was contemplated by the City's General Plan EIR.

The proposed project does not involve 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. Implementation of the proposed project would have a ***less than significant*** impact relative to this issue.

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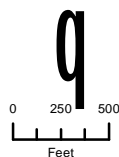


#### Farmland Classification

- Prime Farmland
- Farmland of Statewide Importance
- Farmland of Local Importance
- Rural Residential Land
- Urban and Built-Up Land

#### CITY OF MANTECA - VALENCIA APARTMENTS

Figure 6. Important Farmlands Map



Sources: California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, San Joaquin 2016; San Joaquin County; ArcGIS Online World Imagery Map Service. Map date: January 21, 2019.

DeNovo Planning Group  
A Land Use Planning, Design, and Environmental Firm

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### 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	

#### *Existing Setting*

The project site is located within the San Joaquin Valley Air Pollution Control District (SJVAPCD). This agency is responsible for monitoring air pollution levels and ensuring compliance with federal and state air quality regulations within the San Joaquin Valley Air Basin (SJVAB) and has jurisdiction over most air quality matters within its borders.

The SJVAPCD has primary responsibility for compliance with both the federal and state standards and for ensuring that air quality conditions are maintained. They do this through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues.

Activities of the SJVAPCD include the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the FCAA and CCAA.

The SJVAPCD has prepared the *2007 Ozone Plan* to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone. The *2007 Ozone Plan* provides a comprehensive list of regulatory and incentive-based measures to reduce emissions of ozone and particulate matter precursors throughout the SJVAB. The *2007 Ozone Plan* calls for major advancements in pollution control technologies for mobile and stationary sources of air pollution. The *2007 Ozone Plan* calls for a 75-percent reduction in ozone-forming oxides of nitrogen emissions.

The SJVAPCD has also prepared the *2007 PM<sub>10</sub> Maintenance Plan and Request for Redesignation* (2007 PM<sub>10</sub> Plan). On April 24, 2006, the SJVAPCD submitted a Request for Determination of PM<sub>10</sub> Attainment for the Basin to the California Air Resources Board (CARB). CARB concurred with the request and submitted the request to the U.S. Environmental Protection Agency (EPA) on May 8, 2006. On October 30, 2006, the EPA issued a Final Rule determining that the Basin had attained the National Ambient Air Quality Standards (NAAQS) for PM<sub>10</sub>. However, the EPA noted that the

Final Rule did not constitute a redesignation to attainment until all of the Federal Clean Air Act requirements under Section 107(d)(3) were met.

The SJVAPCD has prepared the *2008 PM<sub>2.5</sub> Plan* to achieve Federal and State standards for improved air quality in the San Joaquin Valley Air Basin. The *2008 PM<sub>2.5</sub> Plan* provides a comprehensive list of regulatory and incentive-based measures to reduce PM<sub>2.5</sub>.

In addition to the *2007 Ozone Plan*, the *2008 PM<sub>2.5</sub> Plan*, and the *2007 PM<sub>10</sub> Plan*, the SJVAPCD prepared the *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI). The GAMAQI is an advisory document that provides Lead Agencies, consultants, and project applicants with analysis guidance and uniform procedures for addressing air quality impacts in environmental documents. Local jurisdictions are not required to utilize the methodology outlined therein. This document describes the criteria that SJVAPCD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for determining whether or not projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. An update of the GAMAQI was approved on March 19, 2015, and is used as a guidance document for this analysis.

### *Responses to Checklist Questions*

#### **Responses a), b):**

#### **Air Quality Plan Consistency**

As discussed below, annual construction emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> will not exceed the SJVAPCD thresholds of significance in any given year. Additionally, annual operational emissions of ROG, PM<sub>2.5</sub>, and PM<sub>10</sub> would not exceed the SJVAPCD thresholds of significance. However, annual operational emissions of NO<sub>x</sub> would exceed the SJVAPCD thresholds of significance.

The City of Manteca General Plan designates the project site for CMU uses. The CMU designation accommodates a variety of purposes including high density residential, employment centers, retail commercial, and professional offices. The allowed density within the CMU designation is 15.1 to 25 dwelling units per acre. With 428 units on 19.58 acres, the proposed density would be 21.9 dwelling units per acre, which is within the allowed density range. The project is consistent with the CMU designation for the site.

The SJVAPCD's various air quality plans (i.e., 2007 Ozone Plan, 2007 PM<sub>10</sub> Plan, and 2008 PM<sub>2.5</sub> Plan) includes growth assumptions generated by SJCOG. These growth assumptions are generated based, in part, on the development projections from individual land use authorities (i.e. incorporated cities and unincorporated counties) that are located within their region. It is noted that the consistency with the SJCOG population projection is growth that would generate population that is at, or below, the projections established by SJCOG. Any growth above the SJCOG population projection, would be growth that is inconsistent with the SJCOG projections. Any growth that is at, or below, the SJCOG projections would be consistent with the SJCOG projections.

The City's 2023 General Plan designates the project area as CMU, which allows for residential densities of up to 25 dwelling units per acre. Therefore, the City's 2023 General Plan anticipated up to 489 units and an associated population of 1,457 persons within the project area. Because the project density does not exceed the maximum allowed, it is consistent with the General Plan and development will remain within (i.e. will not exceed) the SJCOG projections.



Because the proposed project does not exceed the SJCOG projections it is considered to be consistent with the population projections. Therefore, the proposed project would be consistent with the regional air quality plan (i.e., SJVAPCD's 2007 Ozone Plan, 2007 PM<sub>10</sub> Plan, and 2008 PM<sub>2.5</sub> Plan).

### **Cumulative Air Quality Impacts**

As discussed above, the SJVAPCD is an agency responsible for ensuring that air quality conditions are attained, and where non-attainment is determined, this agency develops strategies to achieve attainment in the future. This effort to achieve attainment is documented in the SJVAPCD's various air quality plans (i.e., 2007 Ozone Plan, 2007 PM<sub>10</sub> Plan, and 2008 PM<sub>2.5</sub> Plan), which are updated periodically to accommodate changes. While the scope of the SJVAPCD's strategies to achieve attainment is wide ranging, the agency has established thresholds of significance for individual new projects and if a project exceeds the threshold of significance, then it would also be a significant contribution to a cumulative impact.

The SJVAPCD's air quality significance thresholds represent the maximum emissions from a project that are not expected to conflict with the SJVAPCD's air quality plans, and is not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. These are developed based on the ambient concentrations of the pollutant for each source. Because the project would not exceed the air quality significance thresholds on the project-level (as discussed below), and would not otherwise conflict with the SJVAPCD's air quality plans, the cumulative emissions would not be a significant contribution to a cumulative impact.

### **Construction Emissions**

Construction-generated emissions are temporary and short term but have the potential to represent a significant air quality impact. The construction and development of the proposed project would result in the temporary generation of emissions. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities.

The SJVAPCD has adopted guidelines for determining potential adverse impacts to air quality in the region. The SJVAPCD guidelines state that construction activities are considered a potentially significant adverse impact if: the feasible control measures for construction in compliance with Regulation VIII as listed in the SJVAPCD guidelines are not incorporated or implemented; if the project generates emissions of reactive organic gases (ROG) or oxides of nitrogen (NO<sub>x</sub>) that exceeds 10 tons per year; or if the project generates emissions of respirable particulate matter (PM<sub>10</sub>) or fine particulate matter (PM<sub>2.5</sub>) that exceeds 15 tons per year.

Construction Activities/Schedule: CalEEMod default values were used for the construction schedule and off-road equipment. Construction activities will consist of multiple phases over approximately 2.5 years. These construction activities can be described as site improvements (grading, underground infrastructure, and topside improvements) and vertical construction (building construction and architectural coatings). For purposes of this analysis, it is assumed that the entire project is built-out from 2019 through 2021. This construction schedule is considered a worst-case scenario. Actual construction emissions will likely be spread out over an extended period of time.

**Site Improvements:** The exact construction schedule of the entire project is largely dependent on market demands. For purposes of this analysis it is assumed that site improvements are installed in one phase. This approach will present a more conservative and worst-case scenario.

The site improvement phase of construction will begin with site preparation. The site preparation step will include the use of dozers, backhoes, and loaders to strip (clear and grub) all organic materials and the upper half-inch to inch of soil from the project site. This task will generally take less than two months to complete and will include vehicle trips from construction workers. This step would take approximately 10 days.

After the site is striped of organic materials grading will begin. This activity will involve the use of excavators, graders, dozers, scrapers, loaders, and backhoes to move soil around the project site to create specific engineered grade elevations and soil compaction levels. Grading the project site would take approximately 30 days and will include vehicle trips from construction workers. *(Note: It would be possible to grade the site under a more compacted schedule with extra equipment operating or under a longer timeframe with less equipment.).*

The last task is to install the topside improvements, which includes pouring concrete curbs, gutters, sidewalks, and access aprons and then paving of all streets and parking lots. This task will involve the use of pavers, paving equipment, and rollers and will take approximately 20 days and will include vehicle trips from construction workers. *(Note: It would be possible to install the topside improvements under a more compacted schedule with extra equipment operating or under a longer timeframe with less equipment).*

**Building Construction/Architectural Coatings:** Building construction involves the vertical construction of structures and landscaping around the structures. This task will involve the use of cranes, forklifts, generator sets, welders, and tractors/loaders/backhoes. The exact construction schedule of the entire project is largely dependent on market demands. For purposes of this analysis it is assumed that the entire project is constructed in approximately 2.5 years. The actual building construction phase may be much shorter or much longer. Architectural coatings involve the interior and exterior painting associated with the structures. This task will generally begin after construction begins on the structure and will generally be completed with the completion of the individual buildings.

**Construction Emissions:** The proposed project is larger in scope and size than the SJVAPCD's Small Project Analysis Level (SPAL); therefore, a quantification of the emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> that will be emitted by project construction has been performed. CalEEMod™ (v. 2016.3.2) was used to estimate construction emissions for the proposed project. Below is a list of model assumptions used in the construction screens of CalEEMod. The CalEEMod assumptions and outputs are included in Appendix A.

Table 2 presents the estimated construction phase schedule, which shows the duration of each construction phase. Table 3 shows the off-road construction equipment used during construction for each phase. Following these tables are a list of default factors that were used in the model.

Table 4 shows the construction emissions for the construction years 2019 through 2021.

**Table 2: Construction Phase**

Phase Number	Phase Name	Start Date	End Date	# Days/Week	# Days
1	Site Preparation	7/27/2019	8/9/2019	5	10
2	Grading	8/10/2019	9/20/2019	5	30
3	Paving	11/14/2020	12/11/2020	5	20
5	Building Construction	9/21/2019	11/13/2020	5	300
4	Architectural Coating	12/12/2020	1/8/2021	5	20

SOURCE: CALCEMOD (v. 2016.3.2)

**Table 3: Off-Road Equipment**

Equipment Type	Unit Amount	Hours/Day	Horsepower	Load Factor
<b>Site Preparation</b>				
Rubber Tired Dozers	3	8.00	247	0.40
Tractors/Loaders/Backhoes	4	8.00	97	0.37
<b>Grading</b>				
Excavators	2	8.00	158	0.38
Graders	1	8.00	187	0.41
Rubber Tired Dozers	1	8.00	247	0.40
Scrapers	2	8.00	367	0.48
Tractors/Loaders/Backhoes	2	8.00	97	0.37
<b>Building Construction</b>				
Cranes	1	7.00	231	0.29
Forklifts	3	8.00	89	0.20
Generator Sets	1	8.00	84	0.74
Tractors/Loaders/Backhoes	3	7.00	97	0.37
Welders	1	8.00	46	0.45
<b>Paving</b>				
Pavers	2	8.00	130	0.42
Paving Equipment	2	8.00	131	0.36
Rollers	2	8.00	80	0.38
<b>Architectural Coatings</b>				
Air Compressors	1	6.00	78	0.48

SOURCE: CALCEMOD (v. 2016.3.2).

**Table 4: Construction Emissions (Unmitigated)**

Thresholds	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
	≤ 10 tons/year	≤ 10 tons/year	≤ 15 tons/year	≤ 15 tons/year
2019	0.2392	2.0628	0.4196	0.2209
2020	3.2406	3.0804	0.4613	0.2186
2021	1.2065	5.0600e-003	1.7800e-003	6.9000e-004
<b>Maximum</b>	<b>3.2406</b>	<b>3.0804</b>	<b>0.4613</b>	<b>0.2209</b>
<b>Threshold Exceeded in Any Year?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

NOTES: THE AIR DISTRICT IS ATTAINMENT FOR CO AND SO<sub>2</sub>.

SOURCES: CALCEMOD (v. 2016.3.2).

The SJVAPCD has established construction related emissions thresholds of significance as follows: 10 tons per year of ROG, 10 tons per year of NO<sub>x</sub>, or 15 tons per year of PM<sub>10</sub> or P<sub>2.5</sub>. If the proposed project's emissions will exceed the SJVAPCD's threshold of significance for

construction-generated emissions, the proposed project will have a significant impact on air quality and all feasible mitigation are required to be implemented to reduce emissions. As shown in Table 4 above, annual emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> will not exceed the SJVAPCD thresholds of significance in any given year. Nevertheless, regardless of emission quantities, the SJVAPCD requires construction related mitigation in accordance with their rules and regulations. Implementation of the following mitigation measures will ensure that the proposed project would reduce construction related emissions to the extent possible. With implementation of the following mitigation measures, the proposed project would have a **less than significant** impact related to construction emissions.

#### *Mitigation Measure(s)*

**Mitigation Measure AIR-1:** *Prior to the commencement of construction activities for each phase of the project, the project proponent shall prepare and submit a Dust Control Plan that meets all of the applicable requirements of APCD Rule 8021, Section 6.3, for the review and approval of the APCD Air Pollution Control Officer.*

**Mitigation Measure AIR-2:** *During all construction activities, the project proponent shall implement dust control measures, as required by APCD Rules 8011-8081, to limit Visible Dust Emissions to 20% opacity or less. Dust control measures shall include application of water or chemical dust suppressants to unpaved roads and graded areas, covering or stabilization of transported bulk materials, prevention of carryout or trackout of soil materials to public roads, limiting the area subject to soil disturbance, construction of wind barriers, access restrictions to inactive sites as required by the applicable rules.*

**Mitigation Measure AIR-3:** *During all construction activities, the project proponent shall implement the following dust control practices identified in Tables 6-2 and 6-3 of the GAMAQI (San Joaquin Valley APCD, 2002).*

- a. *All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.*
- b. *All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.*
- c. *All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall control fugitive dust emissions by application of water or by presoaking.*
- d. *When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained.*
- e. *All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations 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. Use of blower devices is expressly forbidden.*
- f. *Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.*
- g. *Limit traffic speeds on unpaved roads to 5 mph; and*
- h. *Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.*



**Mitigation Measure AIR-4:** Architectural coatings applied to all structures in the project site shall meet or exceed volatile organic compound (VOC) standards set in APCD Rule 4601. The project applicant shall submit to the APCD a list of architectural coatings to be used and shall indicate how the coatings meet or exceed VOC standards. If the APCD determines that any architectural coatings do not meet VOC standards, the project applicant shall replace the identified coatings with those that meet standards.

**Mitigation Measure AIR-5:** Asphalt paving shall be applied in accordance with APCD Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

### Operational Emissions

The SJVAPCD is tasked with implementing programs and regulations required by the Federal Clean Air Act and the California Clean Air Act. In that capacity, the SJVAPCD has prepared plans to attain Federal and State ambient air quality standards. To achieve attainment with the standards, the SJVAPCD has established thresholds of significance for criteria pollutant emissions in their *SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts* (2015). Projects with emissions below the thresholds of significance for criteria pollutants would be determined to “Not conflict or obstruct implementation of the District’s air quality plan”.

The proposed project would be a direct and indirect source of air pollution, in that it would generate and attract vehicle trips in the region (mobile source emissions) and it would increase area source emissions and energy consumption. The mobile source emissions would be entirely from vehicles, while the area source emissions would be primarily from the use of natural gas fuel combustion, landscape fuel combustion, consumer products, and architectural coatings.

CalEEMod™ (v.2016.3.2) was used to estimate emissions for buildout of the proposed project. Table 5 shows the emissions, which include mobile, area source, and energy emissions of criteria pollutants that would result from operations of the proposed project. The CalEEMod assumptions and outputs are included in Appendix A.

**Table 5: Operational Buildout Generated Emissions**

	<b>ROG (tons/year)</b>		<b>NOx (tons/year)</b>		<b>PM<sub>10</sub> (tons/year)</b>		<b>PM<sub>2.5</sub> (tons/year)</b>	
<b>Thresholds</b>	<b>≤ 10 tons/year</b>		<b>≤ 10 tons/year</b>		<b>≤ 15 tons/year</b>		<b>≤ 15 tons/year</b>	
<b>Category</b>	<b>UM</b>	<b>M</b>	<b>UM</b>	<b>M</b>	<b>UM</b>	<b>M</b>	<b>UM</b>	<b>M</b>
<b>Area</b>	2.5875	2.1885	0.2560	0.1969	0.6217	0.0305	0.6217	0.0305
<b>Energy</b>	0.0225	0.0201	0.1923	0.1714	0.0155	0.0139	0.0155	0.0139
<b>Mobile</b>	1.1259	1.0941	12.1564	11.7685	3.3516	3.1208	0.9357	0.8716
<b>Total</b>	<b>3.7359</b>	<b>3.3026</b>	<b>12.6046</b>	<b>12.1368</b>	<b>3.9888</b>	<b>3.1651</b>	<b>1.5729</b>	<b>0.9159</b>
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Percent Reduction</b>	<b>11.60</b>		<b>3.71</b>		<b>20.65</b>		<b>41.77</b>	

NOTES: UM = UNMITIGATED, M = MITIGATED; THE AIR DISTRICT IS IN ATTAINMENT FOR CO, AND SO<sub>2</sub>.

SOURCE: CAL EEMOD (v.2016.3.2).

The long-term operational emissions estimate for buildout of the proposed project, incorporates the potential area source and vehicle emissions, and emissions associated with utility and water usage, and wastewater and solid waste generation. The modeling included mitigation inputs for the year 2020 including the following:

### Traffic Mitigation

- Project Setting: Low Density Suburban
- Increase Density: 428 du/19.58 ac = 21.9 du/ac
- Increase Destination Accessibility: Distance to Downtown/Job Center is 1.05 miles (from project site to downtown Manteca)
- Increase Transit Accessibility: Distance to Transit is 0.0 miles (Manteca Transit Routes 2 and 3 pass by and stop at the project site frontage along W. Atherton Drive)
- Improve Pedestrian Network: Project Site and Connecting Off-Site (project includes connections from the site to the adjacent shopping center)

### Energy Mitigation

- Exceed Title 24: 15% Improvement
  - Note: The project would meet or exceed this mitigation by conforming to the current version of the Title 24 Energy Efficiency Standards.
- Install High Efficiency Lighting: 16% Lighting Energy Reduction
  - Note: According to CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*, a minimum of a 16% reduction in electricity usage is expected compared with low-efficiency lighting (i.e., metal halide post top lights as opposed to typical mercury cobrahead lights).
- Install High Efficiency Appliances: within all residences

### Area Mitigation

- Only Natural Gas Hearth

### Water Mitigation

- Install Low-flow Bathroom Faucets
- Install Low-flow Kitchen Faucets
- Install Low-flow Toilets
- Install Low-flow Showers
- Use Water-Efficient Irrigation Systems: CalEEMod Default % Reduction

The SJVAPCD has established their thresholds of significance by which the project emissions are compared against to determine the level of significance. The SJVAPCD has established operations related emissions thresholds of significance as follows: 10 tons per year of NO<sub>x</sub>, 10 tons per year of ROG, 15 tons per year of PM<sub>10</sub>, and 15 tons per year of PM<sub>2.5</sub>. If the proposed project's emissions will exceed the SJVAPCD's threshold of significance for operational-generated emissions, the proposed project will have a significant impact on air quality and all feasible mitigation are required to be implemented to reduce emissions to the extent feasible. As shown in Table 5 above, annual emissions of ROG, PM<sub>2.5</sub>, and PM<sub>10</sub> would not exceed the SJVAPCD thresholds of significance. Annual emissions of NO<sub>x</sub> would exceed the SJVAPCD thresholds of significance.

CalEEMod™ (v.2016.3.2) mitigation assumptions described above were incorporated into the model. With mitigation inputs, annual emissions of NO<sub>x</sub> can be reduced; however, the emissions would not be reduced to below the thresholds of significance. The NO<sub>x</sub> emissions would exceed the SJVAPCD thresholds of significance for operations even with mitigation. The proposed project is subject to the SJVAPCD Rule 9510 (Indirect Source Rule), which could result in substantial mitigation of emissions beyond what is reflected in the modeling outputs. The reductions are

accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Rule fee for any required reductions that have not been accomplished through project mitigation commitments. The current fees are \$9,350 per ton of NO<sub>x</sub>, although these are subject to adjustments by the SJVAPCD. The actual calculations will be accomplished by the SJVAPCD and project applicants as the project (i.e., or portions of the project) are brought forward for approval under Rule 9510. However, even with the application of the ISR and the mitigation measures described above, direct emissions levels remain above the defined thresholds of significance for the project as a whole. It is anticipated that with the payment of fees through the ISR, that the SJVAPCD will offset the emissions by implementing projects/programs that reduce emissions.

Although the operational NO<sub>x</sub> emissions would be above the SJVAPCD threshold, the project site was analyzed for CMU development as part of the City's General Plan EIR process. The rules for tiering are set forth in CEQA Guidelines Section 15152. "[T]iering is a process by which agencies can adopt programs, plans, policies, or ordinances with EIRs focusing on 'the big picture,' and can then use streamlined CEQA review for individual projects that are consistent with such...[first tier decisions] and are...consistent with local agencies' governing general plans and zoning." (*Koster v. County of San Joaquin* (1996) 47 Cal.App.4th 29, 36.) Section 15152 provides that, where a first-tier EIR has "adequately addressed" the subject of cumulative impacts, such impacts need not be revisited in second- and third-tier documents. Furthermore, second- and third-tier documents may limit the examination of impacts to those that "were not examined as significant effects" in the prior EIR or "[a]re susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means." In general, significant environmental effects have been "adequately addressed" if the lead agency determines that:

- a) they have been mitigated or avoided as a result of the prior environmental impact report and findings adopted in connection with that prior environmental impact report; or
- b) they have been examined at a sufficient level of detail in the prior environmental impact report to enable those effects to be mitigated or avoided by site specific revisions, the imposition of conditions, or by other means in connection with the approval of the later project.

Because the City's 2023 General Plan EIR addressed the effects of developing the project site with CMU uses, environmental review can also be streamlined pursuant to Public Resources Code Section 21083.3 and CEQA Guidelines Section 15183.

The proposed project is consistent with the General Plan and zoning designations for the project site. The City's 2023 General Plan designates the project area as CMU, which allows for residential densities of up to 25 dwelling units per acre. Therefore, the City's 2023 General Plan anticipated up to 489 units and an associated population of 1,457 persons within the project area. The analysis included in the City's General Plan EIR assumed that the site would be developed with CMU uses. The project would not increase development beyond the level assumed for the site in the City's General Plan EIR.

The Manteca General Plan 2023 Draft EIR concludes that implementation of the General Plan would result in a significant and unavoidable impact related to violation of air quality standards and contributions to the current nonattainment status for ozone and PM<sub>10</sub>. NO<sub>x</sub> is an ozone precursor, meaning that NO<sub>x</sub> emissions result in the formation of ground-level ozone. The City of Manteca certified the Manteca General Plan 2023 Draft EIR, adopted a statement of overriding considerations relative to this significant and unavoidable impact, and approved the General

Plan. As such, the operational NO<sub>x</sub> emission resulting from operation of the proposed project were previously considered by the City as part of the General Plan and General Plan EIR planning efforts.

As noted above, design elements and compliance with District rules and regulations may not be sufficient to reduce project related impacts on air quality to a less than significant level. In such situations, the *SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts* (February 2015) indicates that the project proponents may enter into a Voluntary Emission Reduction Agreement (VERA) with the SJVAPCD. A VERA is a method by which the project proponent provides pound-for-pound mitigation of air emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort. To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds for the District's Emission Reduction Incentive Program (ERIP). The funds are disbursed by ERIP in the form of grants for projects that achieve emission reductions. Thus, project specific impacts on air quality are offset. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors.

In implementing a VERA, the SJVAPCD verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. The initial agreement is generally based on the projected maximum emissions increases as calculated by a SJVAPCD approved air quality impact assessment, and contains the corresponding maximum fiscal obligation. However, because the goal is to mitigate actual emissions, the SJVAPCD has designed flexibility into the VERA such that the final mitigation is based on actual emissions related to the project as determined by actual equipment used, hours of operation, etc. After the project is mitigated, the SJVAPCD certifies to the lead agency that the mitigation is completed, providing the lead agency with an enforceable mitigation measure demonstrating that project specific emissions have been mitigated.

By its definition, the VERA is a voluntary program initiated by the SJVAPCD to help reduce project-related emissions. The mitigation measure also requires consideration of the benefits of improved air quality with the costs of implementation in the decision making process. Because a VERA is a voluntary program that requires the applicant and the SJVAPCD to agree on a negotiated contractual agreement, a VERA is not considered an enforceable mitigation measures as it provides no specific details or measures that can be mandated at this time. The project applicant retains the option to implement a VERA as a way of reducing emissions in addition to Rule 9510.

## **Conclusion**

Annual construction emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> will not exceed the SJVAPCD thresholds of significance in any given year. The operational NO<sub>x</sub> emissions would exceed the SJVAPCD thresholds of significance for operations even with mitigation. The proposed project is subject to the SJVAPCD Rule 9510 (Indirect Source Rule), which could result in a substantial reduction of emissions beyond what is reflected in the modeling outputs. Compliance with Rule 9510 is required by Mitigation Measure AIR-6.

Additionally, because the proposed project is consistent with the General Plan and zoning designations for the project site, conversion of the site to CMU uses was analyzed by the City's General Plan EIR. The project would not increase development beyond the level assumed for the site in the City's General Plan EIR. As such, the operational NO<sub>x</sub> emission resulting from operation of the proposed project were previously considered by the City as part of the General Plan and General Plan EIR planning efforts. With implementation of the mitigation measures included in this section, this impact would be ***less than significant***.

#### *Mitigation Measure(s)*

***Mitigation Measure AIR-6:*** *Prior to final approval of improvement plans for each phase of the project, the project proponent shall submit an Air Impact Assessment (ALA) application to the San Joaquin Valley Air Pollution Control District for District Rule 9510 Indirect Source Review (ISR) to obtain ALA approval from the District for the phase or project component that is to be constructed. Prior to the issuance of a building permit of each individual phase or project component, the project proponent shall incorporate mitigation measures into the proposed project and demonstrate compliance with District Rule 9510 including payment of all fees.*

#### **Response c):**

#### **Carbon Monoxide Hotspots**

Project traffic would increase concentrations of carbon monoxide along streets providing access to the project site. Carbon monoxide is a local pollutant (i.e., high concentrations are normally only found very near sources). The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations (i.e. hotspots), therefore, are usually only found near areas of high traffic volume and congestion.

The SJVAPCD recommends utilizing a screening approach for analyzing CO concentrations to determine if dispersion modeling is warranted. The methodology provides lead agencies with a conservative indication of whether project-generated vehicle trips will result in the generation of CO emissions that contribute to an exceedance of the thresholds of significance. The recommended screening criteria are divided into two tiers, as described below.

**First Tier:** The proposed project will result in a less-than-significant impact to air quality for local CO if:

- Traffic generated by the proposed project will not result in deterioration of intersection level of service (LOS) to LOS E or F; and
- The project will not contribute additional traffic to an intersection that already operates at LOS of E or F.

For the proposed project, the first tier is met because the addition of project trips would not degrade operations at any of the study intersections, and the project would not contribute traffic to an intersection that already operates at LOS E or F. See Section XVII, Transportation, for more information. As such, the proposed project screens out satisfactorily under Tier 1. Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

#### **Toxic Air Contaminants**

A Toxic Air Contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are



usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources. In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment. These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.

The 2007 EPA rule requires controls that will dramatically decrease Mobile Source Air Toxics (MSAT) emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (VMT) increases by 145 percent, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050. California maintains stricter standards for clean fuels and emissions compared to the national standards, therefore it is expected that MSAT trends in California will decrease consistent with or more than the U.S. EPA's national projections.

CARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* (2007) to provide information to local planners and decision-makers about land use compatibility issues associated with emissions from industrial, commercial and mobile sources of air pollution. The CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel exhaust particulate matter (diesel PM), benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses. Table 6 provides the CARB minimum separation recommendations on siting sensitive land uses. The proposed project does not include any of the source categories identified in the CARB minimum separation standards.

There are sensitive receptors such as residences and parks that are proposed as part of this project. The project site is located within 500 feet of a freeway, SR 120. The majority of the proposed residences and all of the proposed park amenities are well beyond the minimum separation distance from toxic air emitters. Buildings L through P would be located approximately 150 to 495 feet south of SR 120. The remaining lots would be 500 feet to approximately 1,100 feet (approximately 0.21 miles) south of SR 120. The five buildings within 500 feet of SR 120 are all located in the northern portion of the project site. The measurements were taken from the closest lane of SR 120 to the proposed residences (i.e., the southernmost eastbound lane) to the northern wall of each building.

**Table 6: CARB Minimum Separation Recommendations on Siting Sensitive Land Uses**

<b>Source Category</b>	<b>Advisory Recommendations</b>
Freeways and High-Traffic Roads	<ul style="list-style-type: none"> <li>• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.</li> </ul>
Distribution Centers	<ul style="list-style-type: none"> <li>• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week).</li> <li>• Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.</li> </ul>
Rail Yards	<ul style="list-style-type: none"> <li>• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard.</li> <li>• Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.</li> </ul>
Ports	<ul style="list-style-type: none"> <li>• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.</li> </ul>
Refineries	<ul style="list-style-type: none"> <li>• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.</li> </ul>
Chrome Platers	<ul style="list-style-type: none"> <li>• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.</li> </ul>
Dry Cleaners Using Perchloroethylene	<ul style="list-style-type: none"> <li>• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district.</li> <li>• Do not site new sensitive land uses in the same building with perc dry cleaning operations.</li> </ul>
Gasoline Dispensing Facilities	<ul style="list-style-type: none"> <li>• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.</li> </ul>

SOURCE: AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE (CARB 2005).

State law restricts the siting of new schools within 500 feet of a freeway, urban roadways with 100,000 vehicles/day, or rural roadways with 50,000 vehicles with some exceptions. However, no such requirements apply to the siting of residences, day care centers, playgrounds, or medical facilities. The available data show that exposure to vehicle-related pollutants is greatly reduced at approximately 300 feet. Specifically, a southern California study (Zhu, 2002) showed measured concentrations of vehicle-related pollutants, including ultra-fine particles, decreased dramatically within approximately 300 feet of the 710 and 405 freeways.<sup>1</sup> This study is cited by CARB as a reference for their minimum separation recommendations, summarized above. According to this study, total particulate matter in the size range of 6 to 25 nanometers (nm) decreases by about 80% when the distance from the freeways is about 100 meters (or approximately 328 feet). Concentrations of CO and black carbon<sup>2</sup> exhibited similar trends as the distance to freeways increased. Overall, total particulate matter, CO, and black carbon decayed exponentially as distance from the freeways increased.

<sup>1</sup> Zhu, Y., Hinds, W., Kim, S., Shen, S., Sioutas, C. Study of ultrafine particles near a major highway with heavy-duty diesel traffic. *Atmospheric Environment* 36 (2002) 4323-4335.

<sup>2</sup> Black carbon is the sooty black material emitted from gas and diesel engines and other sources that burn fossil fuel. Black carbon comprises a significant portion of particulate matter. Source: <https://www.epa.gov/air-research/black-carbon-research/>

The 710 and 405 freeways, the locations studied in the southern California study (Zhu, 2002), are high volume freeways, especially when compared to SR 120. Freeway 405 is one of the busiest freeways in the Los Angeles basin. Freeway 710 is a major truck route with a large percent of the traffic consisting of heavy-duty diesel trucks. During the sampling period for the southern California study (Zhu, 2002), traffic density along Freeway 710 ranged from 180 to 230 vehicles/min passing the sampling site, total for both directions, with approximately 25% of the vehicles being heavy diesel trucks. Freeway 710 carries approximately 221,000 vehicles per day<sup>3</sup>, while the existing average daily trips along SR 120 is approximately 77,000.

According to the CARB Air Quality and Land Use Handbook: A Community Health Perspective, the risk at that distance for other freeways will vary based on local conditions – it may be higher or lower. However, in all these analyses the relative exposure and health risk dropped substantially within the first 300 feet. The relatively low daily traffic volume along SR 120 compared to the 710 and 405 freeways would result in reduced exposure to vehicle-related pollutants.

Overall, although the proposed project would cite five of the 18 buildings within 500 feet of SR 120, the average daily trips along SR 120 is well below the amount shown in Table 6. Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

**Response d):** 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 project does not include any of the aforementioned uses. As such, implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

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<sup>3</sup> Volume between Imperial Highway and Firestone Boulevard. Source: Caltrans. 2015 Traffic Volumes on California State Highways. Available: [http://www.dot.ca.gov/trafficops/census/docs/2015\\_aadt\\_volumes.pdf](http://www.dot.ca.gov/trafficops/census/docs/2015_aadt_volumes.pdf).



#### 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		

##### *Regional Setting*

The City of Manteca is located in the western portion of the Great Valley Geomorphic Province of California. The Great Valley Province is a broad structural trough bounded by the tilted block of the Sierra Nevada on the east and the complexly folded and faulted Coast Ranges on the west. The San Joaquin River is located just south and west of the City. This major river drains the Great Valley Province into the San Joaquin Delta to the north, ultimately discharging into the San Francisco Bay to the northwest.

The City of Manteca is located within the San Joaquin Valley Bioregion, which is comprised of Kings County, most of Fresno, Kern, Merced, and Stanislaus counties, and portions of Madera, San Luis Obispo, and Tulare counties. The San Joaquin Valley Bioregion is the third most populous out of ten bioregions in the state, with an estimated 2 million people. The largest cities are Fresno, Bakersfield, Modesto, and Stockton. Interstate 5 and State Route 99 are the major north-south roads that run the entire length of the bioregion. Habitat in the bioregion includes vernal pools, valley sink scrub and saltbush, freshwater marsh, grasslands, arid plains, orchards, and oak savannah. Historically, millions of acres of wetlands flourished in the bioregion, but stream diversions for irrigation dried all but about five percent. Remnants of the wetland habitats are

protected in this bioregion in publicly owned parks, reserves, and wildlife areas. The bioregion is considered the state's top agricultural producing region with the abundance of fertile soil.

The region has a Mediterranean climate that is subject to cool, wet winters (often blanketed with fog) and hot, dry summers. The average annual precipitation is approximately 13.81 inches. Precipitation occurs as rain most of which falls between the months of November through April, peaking in January at 2.85 inches. The average temperatures range from December lows of 37.5 F to July highs of 94.3 F.

The project site is relatively flat with a natural gentle slope from southwest to northeast. Topographic features within the project site include level fields, farm roads, and irrigation ditches/catch basins. Elevation ranges from approximately 33 to 40 feet above mean sea level. There are no rivers, streams, or other natural aquatic habitats on the project site. The agricultural fields are actively maintained during the growing season, which includes small man-made irrigation ditches along the perimeter of the fields.

Vegetation on the project site consists of agricultural, ruderal, and landscaping. Because of the active agricultural use, there is very limited natural vegetation on the project site with the exception of the perimeter of the agricultural fields. Common plant species observed in these areas include: wild oat (*Avena barbata*), rip-gut brome (*Bromus diandrus*), softchess (*Bromus hordeaceus*) alfalfa (*Medicago sativa*), Russian thistle (*Salsola tragus*), Italian thistle (*Carduus pycnocephalus*), rough pigweed (*Amaranthus retroflexus*), sunflower (*Helianthus annuus*), tarragon (*Artemisia dracunculus*), coyote brush (*Baccharis pilularis*), prickly lettuce (*Lactuca serriola*), milk thistle (*Silybum marianum*), sow thistle (*Sonchus asper*), telegraph weed (*Heterotheca grandiflora*), barley (*Hordeum* sp.), mustard (*Brassica niger*), and heliotrope (*Heliotropium curassavicum*).

Agricultural and ruderal vegetation found on the project site provides habitat for both common and a few special-status wildlife populations. For example, some commonly observed wildlife species in the region include: California ground squirrel (*Spermophilus beecheyi*), California vole (*Microtus californicus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), white-tailed kite (*Elanus leucurus*), American killdeer (*Charadrius vociferus*), gopher snake (*Pituophis melanoleucus*), garter snake (*Thamnophis species*), and western fence lizard (*Sceloporus occidentalis*), as well as many native insect species. There are also several bat species in the region. Bats often feed on insects as they fly over agricultural and natural areas.

Locally common and abundant wildlife species are important components of the ecosystem. Due to habitat loss, many of these species must continually adapt to using agricultural, ruderal, and ornamental vegetation for cover, foraging, dispersal, and nesting.

### *Responses to Checklist Questions*

**Response a):** The following discussion is based on a background search of special-status species that are documented in the California Natural Diversity Database (CNDDB), the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants, and the U.S. Fish and Wildlife Service's (USFWS) records of listed endangered and threatened species from the IPAC database. The background search was regional in scope and focused on the documented occurrences within 10 miles of the project site. Table 7 provides a list of special-status plants and Table 8 provides a list of special-status animals.

**Table 7: Special-Status Plant Species Which May Occur in Project Area**

<b>Species</b>	<b>Status (Fed./CA/ CNPS/SJMSCP)</b>	<b>Geographic Distribution</b>	<b>Habitat and Blooming Period</b>
Big tarplant <i>Blepharizonia plumosa</i>	--/--/1B.1/No	San Francisco Bay area with occurrences in Alameda, Contra Costa, San Joaquin, Stanislaus, and Solano Counties	Valley and foothill grassland; 30-505 m. July-Oct.
Slough thistle <i>Cirsium crassicaule</i>	--/--/1B.1/Yes	San Joaquin Valley: Kings, Kern, and San Joaquin Counties	Freshwater sloughs and marshes; 3-100 m. May-August.
Recurved larkspur <i>Delphinium recurvatum</i>	--/--/1B.2/Yes	Central Valley from Colusa to Kern Counties	Alkaline soils in saltbush scrub, cismontane woodland, valley and foothill grassland; 3-750 m. March-May.
Round-leaved filaree <i>Erodium macrophyllum</i>	--/--/2.1/No	Scattered occurrences in the Great Valley, southern north Coast Ranges, San Francisco Bay area, south Coast Ranges, Channel Islands, Transverse Ranges, and Peninsular Ranges	Cismontane woodland, valley and foothill grassland on clay soils; 15-1,200 m. March-May.
Delta button-celery <i>Eryngium racemosum</i>	--/E/1B.1/Yes	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 75 m. June-August.
Wright's trichocoronis <i>Trichocoronis wrightii</i> var. <i>wrightii</i>	--/--/2.1/Yes	Scattered locations in the Central Valley; southern coast of Texas	Floodplains, moist places, on alkaline soils; below 450 m. May-September.
Caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i>	--/--/1B.1/Yes	Historically known from the northwest San Joaquin Valley and adjacent Coast Range foothills; currently known from Fresno, Monterey, and San Luis Obispo Counties	Alkaline hills in valley and foothill grassland; below 455 m. March-April.

NOTES: CNPS = CALIFORNIA NATIVE PLANT SOCIETY

SJMSCP = SAN JOAQUIN MULTI-SPECIES HABITAT CONSERVATION AND OPEN SPACE PLAN

**FEDERAL**

E = ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

T = THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

**STATE**

E = ENDANGERED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.

T = THREATENED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.

R = RARE UNDER THE CALIFORNIA ENDANGERED SPECIES ACT

**CALIFORNIA NATIVE PLANT SOCIETY**

1B = RARE, THREATENED, OR ENDANGERED IN CALIFORNIA AND ELSEWHERE.

2 = RARE, THREATENED, OR ENDANGERED IN CALIFORNIA, BUT MORE COMMON ELSEWHERE.

3 = A REVIEW LIST – PLANTS ABOUT WHICH MORE INFORMATION IS NEEDED.

4 = PLANTS OF LIMITED DISTRIBUTION – A WATCH LIST

.1 = SERIOUSLY ENDANGERED IN CALIFORNIA (OVER 80% OF OCCURRENCES THREATENED-HIGH DEGREE AND IMMEDIACY OF THREAT).

.2 = FAIRLY ENDANGERED IN CALIFORNIA (20-80% OCCURRENCES THREATENED).

.3 = NOT VERY ENDANGERED IN CALIFORNIA (&lt;20% OF OCCURRENCES THREATENED).

**Special Status Plant Species**

There are seven special status plants identified as having the potential to occur on the project site based on known occurrences in the region. These include: Big tarplant (*Blepharizonia plumosa*), Slough thistle (*Cirsium crassicaule*), Recurved larkspur (*Delphinium recurvatum*), Round-leaved

filaree (*Erodium macrophyllum*), Delta button-celery (*Eryngium racemosum*), Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*), and Caper-fruited tropidocarpum (*Tropidocarpum capparideum*).

Of the seven species, there are no federal listed species, one state listed species (endangered), five CNPS 1B listed species (including the state listed species), and two CNPS 2 listed species. The state listed species and CNPS 1B listed species are covered species under the SJMCP. The CNPS 2 listed species are not covered under the SJMCP.

Field surveys and habitat evaluations were performed in February 2019, which does not coincide with the blooming period, however, the site was essentially void of natural vegetation based on the tilling operations on the project site and there is no possibility for presence of these species.

**Table 8: Special-Status Wildlife and Fish Species Which May Occur in Project Area**

<i>Species</i>	<i>Status (Fed/CA/ SJMCP)</i>	<i>Geographic Distribution</i>	<i>Habitat Requirements</i>
<b><i>Invertebrates</i></b>			
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T/--/Yes	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County	Common in vernal pools; they are also found in sandstone rock outcrop pools.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	E/--/Yes	Shasta County south to Merced County	Vernal pools and ephemeral stock ponds.
Molestan blister beetle <i>Lytta molesta</i>	--/--/Yes	Distribution of this species is poorly known.	Annual grasslands, foothill woodlands or saltbush scrub.
Sacramento anthicid beetle <i>Anthicus sacramento</i>	--/--/No	Found in several locations along the Sacramento and San Joaquin rivers, from Shasta to San Joaquin counties, and at one site along the Feather River.	Sand dune area, sand slipfaces among bamboo and willow, but may not depend on these plants.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T/--/Yes	Stream side habitats below 3,000 feet throughout the Central Valley	Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant.
<b><i>Amphibians</i></b>			
California tiger salamander <i>Ambystoma californiense</i> ( <i>A. tigrinum c.</i> )	T/SSC/Yes	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grass-lands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy.
California red-legged frog <i>Rana aurora draytoni</i>	T/SSC/Yes	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County	Permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods.

<i>Species</i>	<i>Status (Fed/CA/ SJMSCP)</i>	<i>Geographic Distribution</i>	<i>Habitat Requirements</i>
<b>Birds</b>			
Aleutian goose <i>Branta canadensis leucopareia</i>	D/--/Yes	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.	Roosts in large marshes, flooded fields, stock ponds, and reservoirs; forages in pastures, meadows, and harvested grainfields; corn is especially preferred
American Peregrine Falcon <i>Falco peregrinus anatum</i>	D (BCC)/D/No	Patchy breeding distribution and occur across the continental U.S., with bigger concentrations taking place in the western states and Alaska. They winter in the northern limits of their range, including portions of Canada, and are very widespread during migration.	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.
Bald eagle <i>Haliaeetus leucocephalus</i>	D (BCC)/E/No	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin. Reintroduced into central coast. Winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County	In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, stream, or the ocean
Burrowing owl <i>Athene cunicularia</i>	BCC/SSC/Yes	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows
California black rail <i>Laterallus jamaicensis coturniculus</i>	BCC/T/Yes	Permanent resident in the San Francisco Bay and east-ward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations
Fox sparrow <i>Branta canadensis leucopareia</i>	BCC/--/No	Found throughout North American, with several subspecies wintering in chaparral in California.	Breed in thickets and chaparral across northern North America and south along the western mountains. During migration, Fox Sparrows forage in the leaf litter of open hardwood forests as well as swampy thickets. Winter in chaparral.

<i>Species</i>	<i>Status (Fed/CA/ SJMSCP)</i>	<i>Geographic Distribution</i>	<i>Habitat Requirements</i>
Least Bittern <i>Ixobrychus exilis</i>	BCC/SSC/No	Nest in large marshes with dense vegetation from southern Canada to northern Argentina. These birds migrate from the northern parts of their range in winter for the southernmost coasts of the United States and areas further south, travelling at night.	Colonial nester in marshlands and borders of ponds and reservoirs which provide ample cover. Nests usually placed low in tules, over water. Marsh & swamp wetland.
lesser yellowlegs <i>Branta canadensis leucopareia</i>	BCC/--/No	Wintering occurs along the coasts of California, Baja California, southeastern U.S., and along the Gulf of Mexico, in addition to southeastern Texas and throughout Central America.	Wintering habitat use varies with rainfall; tidal flats may be frequented during the dry season, while adjacent shallow lagoons and marshes are used during the rainy season.
lewis's woodpecker <i>Branta canadensis leucopareia</i>	BCC/--/No	Breed from southern British Columbia down to Arizona and New Mexico; this range also covers California east to Colorado. They winter from southern British Columbia throughout the southwestern U.S. Within the northern portion of its breeding range, it remains present throughout the year in many portions of its breeding range.	Open ponderosa pine forest, open riparian woodland dominated by cottonwood, and logged or burned pine forest. Their breeding distribution is widely associated with ponderosa pine distribution in western North America. Lewis's Woodpeckers commonly reuse existing nest holes or natural cavities in trees, as they do not use newly excavated ones.
Loggerhead shrike <i>Lanius ludovicianus</i>	BCC/SSC/Yes	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
Long-billed curlew <i>Numenius americanus</i>	BCC/--/Yes	Nests in northeastern California in Modoc, Siskiyou, and Lassen Counties. Winters along the coast and in interior valleys west of Sierra Nevada	Nests in high-elevation grasslands adjacent to lakes or marshes. During migration and in winter; frequents coastal beaches and mudflats and interior grasslands and agricultural fields
Marbled godwit <i>Branta canadensis leucopareia</i>	BCC/--/No	Breeds in Montana as well as North and South Dakota, with this range extending through Alberta, Saskatchewan and Manitoba in Canada. Marbled Godwits winter along both coasts and the Gulf of Mexico and are transient elsewhere.	Breeds in marshes and flooded plains, in migration and winter also on mudflats and beaches.
Mountain plover <i>Charadrius montanus</i>	BCC/SSC/Yes	Does not breed in California; in winter, found in the Central Valley south of Yuba County, along the coast in parts of San Luis Obispo, Santa Barbara, Ventura, and San Diego Counties; parts of Imperial, Riverside, Kern, and Los Angeles Counties	Occupies open plains or rolling hills with short grasses or very sparse vegetation; nearby bodies of water are not needed; may use newly plowed or sprouting grainfields



<b>Species</b>	<b>Status (Fed/CA/ SJMSCP)</b>	<b>Geographic Distribution</b>	<b>Habitat Requirements</b>
Nuttalls woodpecker <i>Branta canadensis leucopareia</i>	BCC/--/No	Year-round distribution occurs from northern California and southward to northwestern Baja California.	Found primarily in oak woodlands, but also found in riparian woodlands. Tree nest cavity excavated by males with little assistance from females; male may roost in cavity as it nears completion.
Oak titmouse <i>Baeolophus inornatus</i>	BCC/S/No	Nonmigratory species that breeds from Oregon, through California and to northwest Baja California, Mexico.	Live in warm, open, dry oak or oak-pine woodlands. Many will use scrub oaks or other brush as long as woodlands are nearby. Nests are built in tree cavities. Occasionally, Oak Titmice nest in stumps, fenceposts, pipes, eaves, or holes in riverbanks. They will also use nest boxes.
Short-eared owl <i>Asio flammeus</i>	BCC/SSC/Yes	Permanent resident along the coast from Del Norte County to Monterey County although very rare in summer north of San Francisco Bay, in the Sierra Nevada north of Nevada County, in the plains east of the Cascades, and in Mono County; small, isolated populations	Freshwater and salt marshes, lowland meadows, and irrigated alfalfa fields; needs dense tules or tall grass for nesting and daytime roosts.
Song sparrow (Modesto Population) <i>Melospiza melodia</i>	BCC/SSC/Yes	Restricted to California, where it is locally numerous in the Sacramento Valley, Sacramento–San Joaquin River Delta, and northern San Joaquin Valley. Exact boundaries of range uncertain.	Found in emergent freshwater marshes dominated by tules ( <i>Scirpus</i> spp.) and cattails ( <i>Typha</i> spp.) as well as riparian willow ( <i>Salix</i> spp.) thickets. They also nest in riparian forests of Valley Oak ( <i>Quercus lobata</i> ) with a sufficient understory of blackberry ( <i>Rubus</i> spp.), along vegetated irrigation canals and levees, and in recently planted Valley Oak restoration sites.
Swainson's hawk <i>Buteo swainsoni</i>	BCC/T/Yes	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields
Merlin <i>Falco columbarius</i>	--/--/Yes	Does not nest in California. Rare but widespread winter visitor to the Central Valley and coastal areas	Forages along coastline in open grasslands, savannas, and woodlands. Often forages near lakes and other wetlands

<i>Species</i>	<i>Status (Fed/CA/ SJMSCP)</i>	<i>Geographic Distribution</i>	<i>Habitat Requirements</i>
Tricolored blackbird <i>Agelaius tricolor</i>	BCC/C (SSC)/Yes	Permanent resident in the Central Valley from Butte County to Kern County. Breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields. Habitat must be large enough to support 50 pairs. Probably requires water at or near the nesting colony
Western grebe <i>Branta canadensis leucopareia</i>	BCC/--/No	Breeds mainly from western Canada, east to southwestern Manitoba, and south through U.S. from California and Utah through the northern Rocky Mountain and upper Great Plains states. Winters mainly along Pacific Coast from southeastern Alaska to northwestern Mexico.	Breed on freshwater lakes and marshes with extensive open water bordered by emergent vegetation. During winter they move to saltwater or brackish bays, estuaries, or sheltered sea coasts and are less frequently found on freshwater lakes or rivers.
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	T (BCC)/E/Yes	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers	Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley oak riparian habitats where scrub jays are abundant
Williamson's sapsucker <i>Branta canadensis leucopareia</i>	BCC/--/No	Breeding: Southern British Columbia, through central Washington to California; extending to Idaho, Montana, Utah, Wyoming, Colorado, New Mexico and Arizona. Winter: Arizona, New Mexico, through the Sierra Madres and into central Mexico.	Inhabits open coniferous and mixed coniferous-deciduous forests.
Yellow-billed magpie <i>Pica nuttalli</i>	BCC/--/No	The year-round range of Yellow-billed Magpies is entirely in California.	Resides in oak savanna, open areas with large trees, and along streams. This species also forages in grassland, pasture, fields, and orchards.
Yellow-headed blackbird <i>Xanthocephalus xanthocephalus</i>	--/SSC/Yes	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds.	Nests only where large insects such as odonatan are abundant, nesting timed with maximum emergence of aquatic insects.
<b>Fish</b>			
Delta smelt <i>Hypomesus transpacificus</i>	T/T/Yes	Primarily in the Sacramento–San Joaquin Estuary but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay.	Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand.



<b>Species</b>	<b>Status (Fed/CA/ SJMSCP)</b>	<b>Geographic Distribution</b>	<b>Habitat Requirements</b>
Hardhead <i>Mylopharodon conocephalus</i>	--/SSC/No	Tributary streams in the San Joaquin drainage; large tributary streams in the Sacramento River and the main stem	Resides in low to mid-elevation streams and prefer clear, deep pools and runs with slow velocities. They also occur in reservoirs.
Central Valley steelhead <i>Oncorhynchus mykiss</i>	T/--/No	Sacramento River and tributary Central Valley rivers.	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8°C to 18°C. Habitat types are riffles, runs, and pools.
Central Valley fall- /late fall-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	--/SSC/No	Sacramento and San Joaquin Rivers and tributary Central Valley rivers.	Have the same general habitat requirements as winter and spring-run Chinook salmon.
Longfin smelt <i>Spirinchus thaleichthys</i>	--/SSC/Yes	Occurs in estuaries along the California coast. Adults concentrated in Suisun, San Pablo, and North San Francisco Bays.	Prior to spawning, these fish aggregate in deepwater habitats available in the northern Delta, including, primarily, the channel habitats of Suisun Bay and the Sacramento River. Spawning occurs in fresh water on the San Joaquin River below Medford Island and on the Sacramento River below Rio Vista.
<b>Mammals</b>			
Riparian (San Joaquin Valley) woodrat <i>Neotoma fuscipes riparia</i>	E/SSC, FP/Yes	Historical distribution along the San Joaquin, Stanislaus, and Tuolumne Rivers, and Caswell State Park in San Joaquin, Stanislaus, and Merced Counties; presently limited to San Joaquin County at Caswell State Park and a possible second population near Vernalis	Riparian habitats with dense shrub cover, willow thickets, and an oak overstory
Riparian brush rabbit <i>Sylvilagus bachmani riparius</i>	E/E/Yes	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
American badger <i>Taxidea taxus</i>	--/SSC/Yes	In California, badgers occur throughout the state except in humid coastal forests of northwestern California in Del Norte and Humboldt Counties	Badgers occur in a wide variety of open, arid habitats but are most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub; the principal habitat requirements for the species appear to be sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground

<i>Species</i>	<i>Status (Fed/CA/ SJMSCP)</i>	<i>Geographic Distribution</i>	<i>Habitat Requirements</i>
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	E/T/Yes	Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County	Saltbush scrub, grassland, oak, savanna, and freshwater scrub
<b>Reptiles</b>			
Giant garter snake <i>Thamnophis couchi gigas</i>	T/T/Yes	Central Valley from the vicinity of Burrell in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno	Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; they are also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter.

## STATUS EXPLANATIONS:

**FEDERAL**

E = ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

T = THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

PE = PROPOSED FOR ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

PT = PROPOSED FOR THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.

C = CANDIDATE SPECIES FOR LISTING UNDER THE FEDERAL ENDANGERED SPECIES ACT.

D = DELISTED FROM FEDERAL LISTING STATUS.

BCC = BIRD OF CONSERVATION CONCERN

**STATE**

E = ENDANGERED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.

T = THREATENED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.

C = CANDIDATE SPECIES FOR LISTING UNDER THE STATE ENDANGERED SPECIES ACT.

FP = FULLY PROTECTED UNDER THE CALIFORNIA FISH AND GAME CODE.

SSC = SPECIES OF SPECIAL CONCERN IN CALIFORNIA.

**Special Status Wildlife Species**

**Invertebrates:** There are three special-status invertebrates that are documented within a 10-mile radius of the project site according to the CNDDB including: Molestan blister beetle (*Lytta molesta*), Sacramento anthicid beetle (*Anthicus sacramento*), and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). In addition, the Vernal pool fairy shrimp (*Branchinecta lynchi*) and Vernal pool tadpole shrimp (*Lepidurus packardii*) are documented in the USFWS IPAC database as potentially occurring within the region.

Vernal pool fairy shrimp (VPFS) is a federal threatened invertebrate found in the Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. They are commonly found in vernal pools and in sandstone rock outcrop pools. VPFS is not anticipated to be directly affected by any individual phase or component of the proposed project because there is not appropriate vernal pool habitat on the project site.

Vernal pool tadpole shrimp (VPTS) is a federal endangered invertebrate found in vernal pools and stock ponds from Shasta county south to Merced county. VPTS is not anticipated to be directly affected by any individual phase or component of the proposed project because there is not appropriate vernal pool habitat on the project site.

Valley elderberry longhorn beetle (VELB) is a federal threatened insect, proposed for delisting. Elderberry (*Sambucus* sp.), which is a primary host species for VELB. VELB is not anticipated to be directly affected by the proposed project.

Essential habitat for Molestan blister beetle and Sacramento anthicid beetle is not present on the project site.

No special-status invertebrates are expected to be affected by the proposed project. Nevertheless, Mitigation Measure BIO-1 requires the project proponent to seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species.

Reptile and amphibian species: There is one special-status amphibian that is documented within a 10-mile radius of the project site according to the CNDDB including: California tiger salamander (*Ambystoma californiense*). In addition, the California red-legged frog (*Rana aurora draytoni*) and Giant garter snake (*Thamnophis couchi gigas*) are documented in the USFWS IPAC database as potentially occurring within the region. There is no essential habitat for any of these three species within the project.

No special-status reptiles or amphibians are expected to be affected by the proposed project. Nevertheless, Mitigation Measure BIO-1 requires the project proponent to seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species.

Birds: Special-status birds that are documented in the CNDDB within a ten-mile radius of the project site include: Aleutian goose (*Branta canadensis leucopareia*), Yellow-headed blackbird (*Xanthocephalus xanthocephalus*), Swainson's hawk (*Buteo swainsoni*), song sparrow (Modesto population) (*Melospiza melodia*), Merlin (*Falco columbarius*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), burrowing owl (*Athene cunicularia*), Tricolored blackbird (*Agelaius tricolor*). In addition, the bald eagle (*Haliaeetus leucocephalus*), black rail (*Laterallus jamaicensis*), fox sparrow (*Passerella iliaca*), least bittern (*Ixobrychus exilis*), lesser yellowlegs (*Tringa flavipes*), Lewis's woodpecker (*Melanerpes lewis*), loggerhead shrike (*Lanius ludovicianus*), long-billed curlew (*Numenius americanus*), marbled godwit (*Limosa fedoa*), mountain plover (*Charadrius montanus*), Nuttalls woodpecker (*Picoides nuttalli*), oak titmouse (*Baeolophus inornatus*), peregrine falcon (*Falco peregrinus*), short-eared owl (*Asio flammeus*), western grebe (*Aechmophorus occidentalis*), Williamson's sapsucker (*Sphyrapicus thyroideus*), and yellow-billed magpie (*Pica nuttalli*) are documented in the USFWS IPAC database as potentially occurring within the region. The project site may provide suitable foraging habitat for a variety of potentially occurring special-status birds, including those listed above. Potential

nesting habitat is present in a variety of trees located within the project site and in the vicinity. There is also the potential for other special-status birds that do not nest in this region and represent migrants or winter visitants to forage on the project site.

*Year-round birds:* Special-status birds that can be present in the region throughout the year include: bald eagle (*Haliaeetus leucocephalus*), black rail (*Laterallus jamaicensis*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), Nuttalls woodpecker (*Picoides nuttalli*), oak titmouse (*Baeolophus inornatus*), song sparrow (Modesto population) (*Melospiza melodia*), tricolored blackbird (*Agelaius tricolor*), Williamson's sapsucker (*Sphyrapicus thyroideus*), yellow-billed magpie (*Pica nuttalli*), among others. Some of these species are migratory, but also reside year-round in California.

*Summering Birds:* Special-status birds that are only present in the region in the spring and summer months include: Aleutian goose (*Branta canadensis leucopareia*), least bittern (*Ixobrychus exilis*), Swainson's hawk (*Buteo swainsoni*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and yellow-billed magpie (*Pica nuttalli*).

*Overwintering Birds:* Special-status birds that are only present in the region in the fall and winter months include: fox sparrow (*Passerella iliaca*), lesser yellowlegs (*Tringa flavipes*), Lewis's woodpecker (*Melanerpes lewis*), long-billed curlew (*Numenius americanus*), marbled godwit (*Limosa fedoa*), merlin (*Falco columbarius*), mountain plover (*Charadrius montanus*), peregrine falcon (*Falco peregrinus*), short-eared owl (*Asio flammeus*), and western grebe (*Aechmophorus occidentalis*).

*Nesting Raptors (Birds of Prey):* All raptors (owls, hawks, eagles, falcons), including species and their nests, are protected from take pursuant to the Fish and Game Code of California Section 3503.5, and the federal Migratory Bird Treaty Act, among other federal and State regulations. Special-status raptors that are known to occur in the region include: bald eagle (*Haliaeetus leucocephalus*), burrowing owl (*Athene cunicularia*), Cooper's hawk (*Accipiter cooperii*), ferruginous hawk (*Buteo rega*), golden eagle (*Aquila chrysaetos*), great horned owl (*Bubo virginianus*), prairie falcon (*Falco mexicanus*), red-tailed hawk (*Buteo jamaicensis*), short-eared owl (*Asio flammeus*), Swainson's hawk (*Buteo swainsoni*), and white-tailed kite (*Elanus leucurus*), among others.

*Analysis:* While the project site contains very limited nesting habitat, there are powerlines and trees located in the region that represent potentially suitable nesting habitat for a variety of special-status birds. Additionally, the agricultural land represents potentially suitable nesting habitat for the ground-nesting birds where disturbance is less frequent. In general, most nesting occurs from late February and early March through late July and early August, depending on various environmental conditions. The CNDDDB currently contains nesting records for Swainson's hawk and burrowing owl in the vicinity of the project site. In addition to the species described above, common raptors such as among others, may nest in or adjacent to the project site.

New sources of noise and light during the construction and operational phases of the project could adversely affect nesters if they located adjacent to the project site in any given year. Additionally, the proposed project would eliminate the agricultural areas on the project site, which serve as potential foraging habitat for birds throughout the year. Mitigation Measure BIO-1 requires participation in the SJMSCP. As part of the SJMSCP, SJCOG requires preconstruction surveys for projects that occur during the avian breeding season (March 1 – August 31). When active nests are identified, the biologists develop buffer zones around the active nests as deemed appropriate until the young have fledged. SJCOG also uses the fees to purchase habitat as

compensation for the loss of foraging habitat. Implementation of the proposed project, with the Mitigation Measure 3.4-1, would ensure that potential impacts to special status birds are reduced.

**Mammals:** Special-status mammals that are documented within a 10-mile radius of the project site include: Riparian (San Joaquin Valley) woodrat (*Neotoma fuscipes riparia*), Riparian brush rabbit (*Sylvilagus bachmani riparius*), American badger (*Taxidea taxus*), and San Joaquin kit fox (*Vulpes macrotis mutica*).

Riparian (San Joaquin Valley) woodrat and riparian brush rabbit: The project site does not contain appropriate habitat for riparian (San Joaquin Valley) woodrat and riparian brush rabbit.

American badger, San Joaquin kit fox, or San Joaquin pocket mouse: The project site is frequently disturbed from active agricultural activities. As a result, the project site does not contain high quality habitat for the American badger. All but one of the documented occurrences of the San Joaquin kit fox occur on the southwest side of Tracy near the foothills with one documented occurrence located near Mountain House. The closest documented occurrence of San Joaquin pocket mouse is approximately five miles west of the project site. It is unlikely that the project site is used by American badger, San Joaquin kit fox, or San Joaquin pocket mouse and these species have not been observed during recent or previous field surveys.

Special-status bats: The project site provides potential habitat for several special-status bats, including: Greater western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillei*), small-footed myotis/bat (*Myotis ciliolabrum*), long-eared myotis/bat (*Myotis evotis*), fringed myotis/bat (*Myotis thysanodes*), long-legged myotis/bat (*Myotis volans*), and Yuma myotis/bat (*Myotis yumanensis*). These species are not federal or state listed; however, they are tracked by the CNDDDB. Development of the project site would eliminate foraging habitat for special status bats by removing the agricultural areas. These special status bat species are covered by the SJMSCP.

## Conclusion

No special-status species are expected to be affected by the proposed project. Nevertheless, Mitigation Measure BIO-1 requires the project proponent to seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species. Therefore, the proposed project would have a **less than significant** impact relative to this topic.

### Mitigation Measure(s)

**Mitigation Measure BIO-1:** Prior to commencement of any grading activities, the project proponent shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a project includes incidental take authorization (permits) under the Endangered Species Act Section



10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species.

**Responses b):** There is no riparian habitat on the project site. The CNDDDB record search revealed documented occurrences of four sensitive habitats within 10 miles of the project site including: Elderberry Savanna, Great Valley Cottonwood Riparian Forest, Great Valley Mixed Riparian Forest, and Great Valley Oak Riparian. None of these sensitive natural communities occur within the portion of the project site. Implementation of the proposed project would have a **less than significant** impact on riparian habitats or natural communities.

**Response c):** The project site does not contain protected wetlands or other jurisdictional areas and there is no need for permitting associated with the federal or state Clean Water Acts. The irrigation ditches are man-made isolated facilities with the sole purpose of agricultural irrigation. These ditches are exempt from permitting. Absent any wetlands or jurisdictional waters, implementation of the proposed project would have **less than significant** impact relative to this topic.

**Response d):** The CNDDDB record search did not reveal any documented wildlife corridors or wildlife nursery sites on or adjacent to the project site. Special status fish species documented within the region include: Delta smelt (*Hypomesus transpacificus*), Hardhead (*Mylopharodon conocephalus*), Central Valley steelhead (*Oncorhynchus mykiss*), Central Valley fall- /late fall-run Chinook salmon (*Oncorhynchus tshawytscha*), and Longfin smelt (*Spirinchus thaleichthys*). The closest major natural movement corridor for native fish that are documented in the region is the San Joaquin River, located to the west of the project site. The land uses within the project site would not have any direct disturbance to the San Joaquin River or its tributaries, and therefore, would not have any direct disturbance to the movement corridor or habitat.

The ongoing operational phase of the proposed project requires discharge of stormwater into the City storm drainage system, which ultimately discharges into the Delta. The discharge of stormwater could result in indirect impacts to special status fish and wildlife if stormwater was not appropriately treated through BMPs prior to its discharge to the Delta. The Manteca Municipal Code Title 13 (Public Services) Chapter 13.28 (Stormwater Management and Discharges) establish minimum storm water management requirements and controls. Storm water drainage is managed through the implementation of best management practices to the extent they are technologically achievable to prevent and reduce pollutants. The City requires reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses. The management of water quality through BMPs is intended to ensure that water quality does not degrade to levels that would interfere or impede fish or wildlife. Implementation of these required measures would ensure that this potential impact is reduced to a **less than significant** level.

**Responses e):** The proposed project is subject to the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). The proposed project does not conflict with the SJMSCP. Therefore, the proposed project would have a **less than significant** impact relative to this topic. Mitigation Measure presented in this Initial Study requires participation in the SJMSCP.

**Responses f):** The Resource Conservation Element of the General Plan establishes numerous policies and implementation measures related to biological resources as listed below:

## Conservation Element Policies

RC-P-31. Minimize impact of new development on native vegetation and wildlife.

- **Consistent:** *This Initial Study includes an in depth analysis of impacts for sensitive plants and wildlife, as well as habitat. Where impacts are identified, mitigation measures are presented to minimize, avoid, or compensate to the extent practicable.*

RC-P-33. Discourage the premature removal of orchard trees in advance of development, and discourage the removal of other existing healthy mature trees, both native and introduced.

- **Consistent:** *The proposed project will not require the removal of orchard trees.*

RC-P-34. Protect special status species and other species that are sensitive to human activities.

- **Consistent:** *This Initial Study includes an in depth analysis of impacts for sensitive plants and wildlife, as well as habitat. Where impacts are identified, mitigation measures are presented to minimize, avoid, or compensate to the extent practicable.*

RC-P-35. Allow contiguous habitat areas.

- **Consistent:** *Habitat areas in the vicinity of the project site include agricultural plant communities which provide habitat for a variety of biological resources in the region. Agricultural areas occur throughout the region and are generally flat and well drained, and as a result are well suited for many crops. Alfalfa fields, hay, row crops, orchards, dominate the agricultural areas in the vicinity. The proposed project does not require contiguous habitat areas to change or convert to another use.*

RC-P-36. Consider the development of new drainage channels planted with native vegetation, which would provide habitat as well as drainage.

- **Consistent:** *The project does not include new drainage channels.*

## Municipal Code

The Manteca Municipal Code calls for the avoidance of heritage trees as defined under section 17.61.030. Heritage trees are any natural woody plant rooted in the ground and having a diameter of 30 inches or more when measured two feet above the ground. There are no heritage trees on the project site.

Section 17.19.060 calls for the protection of all existing trees having a diameter of six inches or more when measured 4½ feet above the ground. The City planning department must be notified of planned construction or grade changes within the proximity of existing mature trees. Existing trees must be protected from construction equipment, machinery, grade changes, and excavation for utilities, paving, and footers. Replacement of existing trees is subject to approval from the planning director and must be with a minimum 24-inch box tree of compatible species for the development site and be consistent with Section 17.19.030. There is an existing mature tree located along the southeast boundary of the project site near the neighboring orchard.

Section 12.08.070 of the municipal code prohibits cutting, pruning, removing, injuring, or interference with any tree, shrub, or plant upon or in any street tree area or other public place in the City without prior approval from the superintendent. The City is authorized to grant such permission at their discretion and where necessary. Except for utility companies, as provided in

Section 12.08.080, no such permission shall be valid for a longer period than 30 days after its issuance.

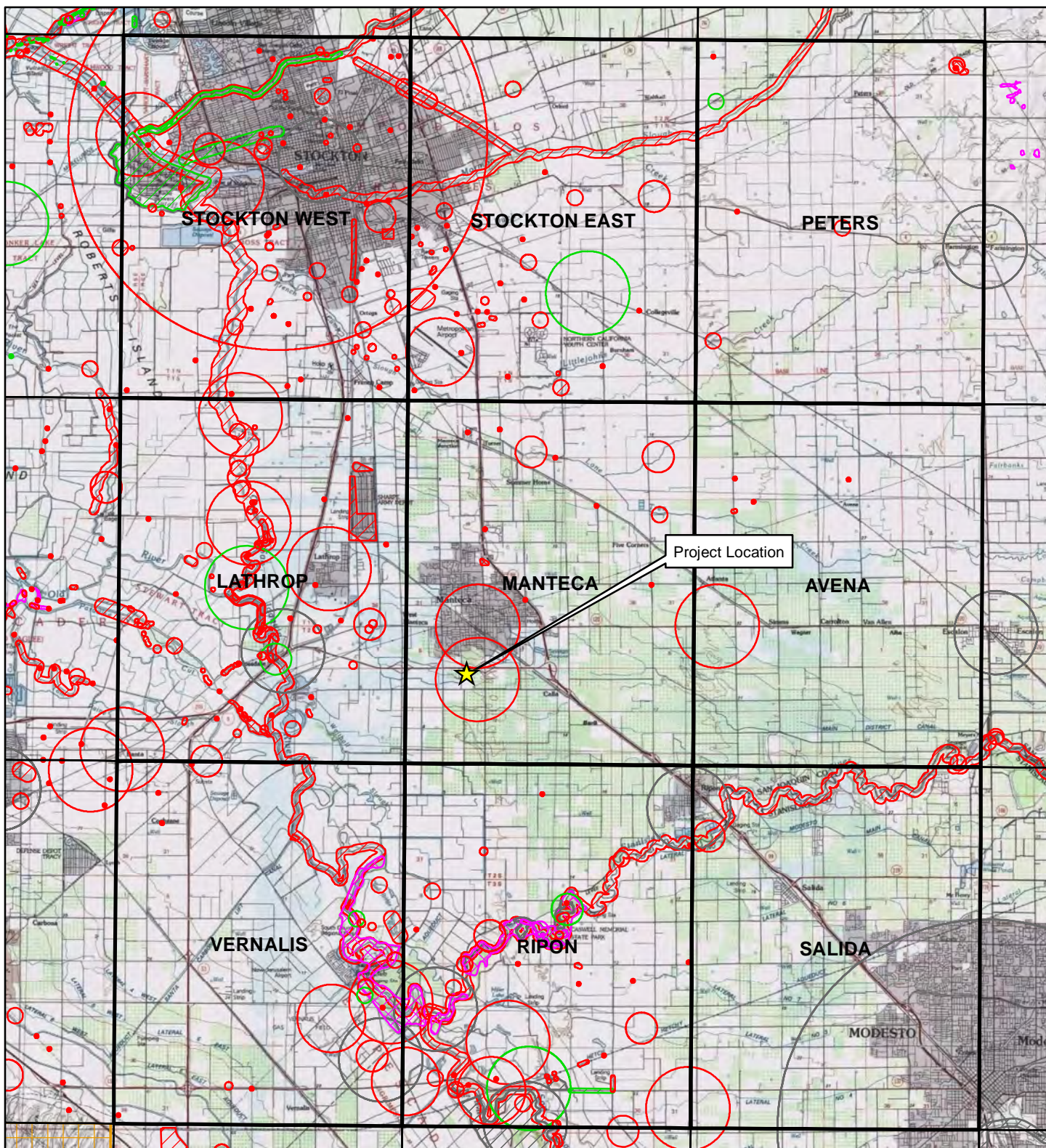
The project site contains numerous ornamental landscaping and shade trees in association with the existing commercial development along the western boundary, and one mature tree located in the southeast boundary of the project site. Trees that cannot remain in the final design must be replaced in accordance with the *Manteca Municipal Code (17.19.060)* if deemed applicable at the time of removal.

The following mitigation measures would require compliance with the Manteca Municipal Code for removal and replacement of trees. With the implementation of the following mitigation measures, the proposed project would have a **less than significant** impact relative to this topic.

*Mitigation Measure(s)*

**Mitigation Measure BIO-2:** *Prior to the approval of improvement plans, the applicant shall provide a landscape plan that includes tree planting specifications established by the Manteca Municipal Code (17.19.060) for the replacement of any trees, excluding orchard and non-native trees, to be removed at a ratio of 1:1. Replacement trees shall be planted on-site at a location that is agreeable to the City.*

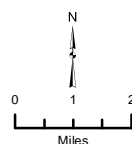




#### Special Status Species Occurrences

- |                       |                                  |
|-----------------------|----------------------------------|
| Plant (80m)           | Animal (circular)                |
| Plant (specific)      | Terrestrial Comm. (specific)     |
| Plant (non-specific)  | Terrestrial Comm. (circular)     |
| Plant (circular)      | Multiple (non-specific)          |
| Animal (80m)          | Multiple (circular)              |
| Animal (specific)     | Sensitive EO's (Commercial only) |
| Animal (non-specific) |                                  |

CNDDB version 01/2019. Please Note: the occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area. Basemap: ArcGIS Online Topographic Map Service. Map date: January 1, 2019.



#### CITY OF MANTECA - VALENCIA APARTMENTS

Figure 7. California Natural Diversity Database - 9-Quad Search

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## 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		

### *Responses to Checklist Questions*

**Responses a), b):** A record search was conducted for the project site and surrounding area through the Central California Information Center (CCIC) of the California Historical Resources Information System on February 6, 2019 (CCIC file No.: 10978L). The record search indicates that: the project site does not contain any recorded prehistoric or historic archaeological resources or historic buildings. Additionally, with the regular disturbance associated with the agricultural operations it is anticipated that any buried resources would have been found over time. Nevertheless, there is some possibility that a buried site may exist in the area and be obscured by vegetation, fill, or other historic activities, leaving no surface evidence. Should artifacts or unusual amounts of stone, bone, or shell be uncovered during construction activities, an archeologist would be consulted for an evaluation. Implementation of the following mitigation measure would require investigations and avoidance methods in the event that a previously undiscovered cultural resource is encountered during construction activities. With implementation of the following mitigation measure, development of the proposed project would have a **less than significant** impact on historical and archaeological resources.

### *Mitigation Measure(s)*

**Mitigation Measure CUL-1:** *If cultural resources (i.e., prehistoric sites, historic sites, isolated artifacts/features, and paleontological sites) are discovered, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Manteca shall be notified, and a qualified archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology (or a qualified paleontologist in the event paleontological resources are found) shall be retained to determine the significance of the discovery. The City of Manteca shall consider recommendations presented by the professional for any unanticipated discoveries and shall carry out the measures deemed feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. Specific measures are developed based on the significance of the find.*

**Response c):** Indications are that humans have occupied the Central Valley for at least 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 in the event that human remains are inadvertently discovered during construction. Implementation of the following mitigation measure would reduce this potential impact to a **less than significant** level.

*Mitigation Measure(s)*

**Mitigation Measure CUL-2:** *If any human remains are found during grading and construction activities, all work shall be halted immediately within 50 meters (165 feet) of the discovery and the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed. Additionally, if the Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the applicant's expense.*

## 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	

### *Responses to Checklist Questions*

**Responses a), b):** Appendix F of 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]). According to Appendix F of the CEQA Guidelines, 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 proposed project includes the construction of 428 multi-family residential units. The amount of energy used at the project site would directly correlate to the size of the proposed units, 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 following discussion provides calculated levels of energy use expected for the proposed project, based on commonly used modelling software (i.e. CalEEMod v.2016.3.2 and the California Air Resource Board’s EMFAC2014). It should be noted that many of the assumptions provided by CalEEMod are conservative relative to the proposed project. Therefore, this discussion provides a conservative estimate of proposed project emissions.

### **Electricity and Natural Gas**

Electricity and natural gas used by the proposed project would be used primarily to power on-site buildings. Total annual unmitigated and mitigated electricity (kWh) and natural gas (kBtu) usage associated with the operation of the proposed project are shown in Tables 9 and 10, below (as provided by CalEEMod). The proposed project incorporates feasible mitigation to reduce the proposed project’s operational electricity and natural gas consumption.

According to Calico’s *Appendix A: Calculation Details for CalEEMod*, CalEEMod uses the California Commercial End Use Survey (CEUS) database to develop energy intensity value for non-residential buildings. The energy use from residential land uses is calculated based on the Residential Appliance Saturation Survey (RASS). Similar to CEUS, this is a comprehensive energy use assessment that includes the end use for various climate zones in California.

**Table 9: Project Operational Natural Gas and Electricity Usage (Unmitigated Scenario)**

<b>Emissions<sup>(a)</sup></b>	<b>Natural Gas (kBtu/year)</b>	<b>Electricity (kWh/year)</b>
Apartments Mid Rise	4,172,190	1,821,760
<b>Total</b>	<b>4,172,190</b>	<b>1,821,760</b>

NOTE: <sup>(a)</sup> NUMBERS PROVIDED HERE MAY NOT ADD UP EXACTLY TO TOTAL DUE TO ROUNDING.

SOURCE: CAL EEMOD (v.2016.3.2).

**Table 10: Project Operational Natural Gas and Electricity Usage (Mitigated Scenario)**

<b>Emissions<sup>(a)</sup></b>	<b>Natural Gas (kBtu/year)</b>	<b>Electricity (kWh/year)</b>
Apartments Mid Rise	3,718,860	1,741,400
<b>Total</b>	<b>3,718,860</b>	<b>1,741,400</b>

NOTE: <sup>(a)</sup> NUMBERS PROVIDED HERE MAY NOT ADD UP EXACTLY TO TOTAL DUE TO ROUNDING.

SOURCE: CAL EEMOD (v.2016.3.2).

As shown in Tables 9 and 10, project operational energy usage would be reduced with implementation of project components considered mitigation by CalEEMod (note: given the limited mitigation options available in the current version of CalEEMod, the reduction attributable to mitigation represents a conservative analysis). As described in Section III, Air Quality, the proposed project incorporates feasible mitigation that would reduce the proposed project's energy consumption, as compared to the unmitigated scenario. The mitigation measures included in Section III would require further mitigation that would reduce proposed project operational electricity and natural gas emissions. These reductions in overall proposed project energy usage also reflect a reduction in the project's energy intensity.

### On-Road Vehicles (Operation)

The proposed project would generate vehicle trips during its operational phase. According to the Transportation Impact Analysis Report prepared for the proposed project (Fehr & Peers, 2019), the project would generate approximately 3,134 new daily vehicles trips. In order to calculate operational on-road vehicle energy usage and emissions, default trip lengths generated by CalEEMod were used, which are based on the project location and urbanization level parameters De Novo (the Initial Study consultant) selected within CalEEMod (i.e. "San Joaquin Valley Air Pollution Control District" project location and "Urban" setting, respectively). These values are provided by the individual districts or use a default average for the state, depending on the location of the proposed project (CAPCOA, 2017). Based on default factors provided by CalEEMod, the average distance per trip was conservatively calculated to be approximately 9.0 miles. Therefore, the proposed project would generate at total of approximately 28,102 average daily vehicle miles travelled (Average Daily VMT). Using fleet mix data provide by CalEEMod (v2016.3.2), and Year 2021 gasoline and diesel MPG (miles per gallon) factors for individual vehicle classes as provided by EMFAC2014, De Novo derived weighted MPG factors for operational on-road vehicles of approximately 26.0 MPG for gasoline and 7.7 MPG for diesel vehicles. With this information, De Novo calculated as a conservative estimate that the unmitigated proposed project would generate vehicle trips that would use a total of approximately 900 gallons of gasoline and 589 gallons of diesel fuel per day, on average, or 328,391 gallons of gasoline and 215,003 annual gallons of diesel fuel per year.

### On-Road Vehicles (Construction)

The proposed project would also generate on-road vehicle trips during project construction (from construction workers and vendors). Estimates of vehicle fuel consumed were derived based on the assumed construction schedule, vehicle trip lengths and number of workers per



construction phase as provided by CalEEMod, and Year 2018 gasoline MPG factors provided by EMFAC2014. For the purposes of simplicity, it was assumed that all vehicles used gasoline as a fuel source (as opposed to diesel fuel or alternative sources). Table 11, below, describes gasoline and diesel fuel used by on-road mobile sources during each phase of the construction schedule. As shown, the vast majority of on-road mobile vehicle fuel used during the construction of the proposed project would occur during the building construction phase. See Appendix A for a detailed calculation.

**Table 11: On-Road Mobile Fuel Generated by Project Construction Activities – By Phase**

<b>Construction Phase</b>	<b># of Days</b>	<b>Total Daily Worker Trips<sup>(a)</sup></b>	<b>Total Daily Vendor Trips<sup>(a)</sup></b>	<b>Gallons of Gasoline Fuel<sup>(b)</sup></b>	<b>Gallons of Diesel Fuel<sup>(b)</sup></b>
Site Preparation	10	18	-	38	-
Grading	30	20	-	67	-
Building Construction	300	308	46	35,367	19,901
Paving	20	15	-	139	-
Architectural Coating	20	62	-	469	-
<b>Total</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>36,080</b>	<b>19,901</b>

NOTE: <sup>(A)</sup> PROVIDED BY CALEEMOD. <sup>(B)</sup> SEE APPENDIX A FOR FURTHER DETAIL

SOURCE: CALEEMOD (v.2016.3.2); EMFAC2014.

### Off-Road Vehicles (Construction)

Off-road construction vehicles would use diesel fuel during the construction phase of the proposed project. A non-exhaustive list of off-road constructive vehicles expected to be used during the construction phase of the proposed project includes: cranes, forklifts, generator sets, tractors, excavators, and dozers. Based on the total amount of CO<sub>2</sub> emissions expected to be generated by the proposed project (as provided by the CalEEMod output), and a CO<sub>2</sub> to diesel fuel conversion factor (provided by the U.S. Energy Information Administration), the proposed project would use a total of approximately 8,515 gallons of diesel fuel for off-road construction vehicles (during the site preparation and grading phases of the proposed project). Detailed calculations are provided in Appendix A.

### Other

Proposed project landscape maintenance activities would generally require the use fossil fuel (i.e. gasoline) energy. For example, lawn mowers require the use of fuel for power. As an approximation, it is estimated that landscape care maintenance would require approximately four individuals one full day per week, or 1,677 hours per year (or 416.8 hours per year per landscaper). Assuming an average of approximately 0.5 gallons of gasoline used per person-hour, the proposed project would require the use of approximately 839 gallons of gasoline per year to power landscape maintenance equipment. The energy used to power landscape maintenance equipment would not differ substantially from the energy required for landscape maintenance for similar project.

The proposed project could also use other sources of energy not identified here. Examples of other energy sources include alternative and/or renewable energy (such as solar PV) and/or on-site stationary sources (such as on-site diesel generators) for electricity generation. The proposed project would be solar-ready, which could reduce the need for fossil fuel-based energy (for proposed project buildings), including for electricity.

## Conclusion

The proposed project would use energy resources for the operation of project buildings (electricity and natural gas), for on-road vehicle trips (e.g. gasoline and diesel fuel) generated by the proposed project, and from off-road construction activities associated with the proposed project (e.g. diesel fuel). Each of these activities would require the use of energy resources. The proposed project would be responsible for conserving energy, to the extent feasible, and relies heavily on reducing per capita energy consumption to achieve this goal, including through Statewide and local measures.

The proposed project would be in compliance with all applicable Federal, State, and local regulations regulating energy usage. For example, PG&E is responsible for the mix of energy resources used to provide electricity for its customers, and it is in the process of implementing the Statewide Renewable Portfolio Standard (RPS) to increase the proportion of renewable energy (e.g. solar and wind) within its energy portfolio. PG&E is expected to achieve at least a 33% mix of renewable energy resources by 2020, and 50% by 2030. Additionally, energy-saving regulations, including the latest State Title 24 building energy efficiency standards ("part 6"), would be applicable to the proposed project (note: as provided under Mitigation Measure 3.7-1, the proposed project would achieve a 15% increase in energy efficiency beyond the 2016 version of the Title 24 Energy code). Other Statewide measures, including those intended to improve the energy efficiency of the statewide passenger and heavy-duty truck vehicle fleet (e.g. the Pavley Bill and the Low Carbon Fuel Standard), would improve vehicle fuel economies, thereby conserving gasoline and diesel fuel. These energy savings would continue to accrue over time. Furthermore, as described previously, the incorporation of the mitigation measures described previously in this section would further reduce project energy consumption.

As a result, the proposed project would not result in any significant adverse impacts related to project energy requirements, energy use inefficiencies, and/or the energy intensiveness of materials by amount and fuel type for each stage of the project including construction, operations, maintenance, and/or removal. PG&E, the electricity and natural gas provider to the site, maintains sufficient capacity to serve the proposed project. The proposed project would comply with all existing energy standards, including those established by the City of Davis, and would not result in significant adverse impacts on energy resources. Furthermore, existing connections exist between the project site and nearby pedestrian and bicycle pathways, and public transit access exists nearby, reducing the need for local motor vehicle travel. Although improvements to the City's pedestrian, bicycle, and public transit systems would provide further opportunities for alternative transit, the proposed project would be linked closely with existing networks that, in large part, are sufficient for most residents of the proposed project and the City of Manteca as a whole. For these reasons, the proposed project would not be expected cause an inefficient, wasteful, or unnecessary use of energy resources nor cause a significant impact on any of the threshold as described by Appendix F of the CEQA Guidelines. This is a ***less than significant*** impact.

## 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	

### Responses to Checklist Questions

**Responses a.i), a.ii):** Figure 8 shows the earthquake faults in the vicinity of the project site. As shown in the figure, the site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone, and known surface expression of active faults does not exist within the site. However, the site is located within a seismically active region. The U.S. Geological Survey identifies potential seismic sources within 32.2 kilometers (20 miles) of the project site. Two of the closest known faults classified as active by the U.S. Geological Survey are an unnamed fault east of the City of Tracy, located approximately 7 miles to the west, and the San Joaquin fault, located approximately 15 miles to the southwest. The Midway fault is located approximately 20

miles to the west. Other faults that could potentially affect the proposed project include the Corral Hollow-Carnegie fault, the Greenville fault, the Antioch fault, and the Los Positas fault.

### **Geologic Hazards**

Potential seismic hazards resulting from a nearby moderate to major earthquake could generally be classified as primary and secondary. The primary seismic hazard is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking and ground lurching.

#### **Ground Rupture**

Because the property does not have known active faults crossing the site, and the site is not located within an Earthquake Fault Special Study Zone, ground rupture is unlikely at the subject property.

#### **Ground Shaking**

According to the California Geological Survey's Probabilistic Seismic Hazard Assessment Program, Manteca is considered to be within an area that is predicted to have a 10 percent probability that a seismic event would produce horizontal ground shaking of 10 to 20 percent within a 50-year period. This level of ground shaking correlates to a Modified Mercalli intensity of V to VII, light to strong. As a result of these factors the California Geological Survey has defined the entire county as a seismic hazard zone. There will always be a potential for groundshaking caused by seismic activity anywhere in California, including the project site.

In order to minimize potential damage to the buildings and site improvements, all construction in California is required to be designed in accordance with the latest seismic design standards of the California Building Code. The California Building Code, Title 24, Part 2, Chapter 16 addresses structural design and Chapter 18 addresses soils and foundations. Collectively, these state requirements, which have been adopted by the City of Manteca, include design standards and requirements that are intended to minimize impacts to structures in seismically active areas of California. Section 1613 specifically provides structural design standards for earthquake loads. Section 1803.5.11 and 1803.5.12 provide requirements for geotechnical investigations for structures assigned varying Seismic Design Categories in accordance with Section 1613. Design in accordance with these standards and policies would reduce any potential impact to a less than significant level.

#### **Landslides**

The proposed project site is not susceptible to landslides because the area is essentially flat. This is a less than significant impact.

### **Conclusion**

In order to minimize potential damage to the buildings and site improvements, all construction in California is required to be designed in accordance with the latest seismic design standards of the California Building Code. The California Building Code, Title 24, Part 2, Chapter 16 addresses structural design and Chapter 18 addresses soils and foundations. Collectively, these state requirements, which have been adopted by the City of Manteca, include design standards and requirements that are intended to minimize impacts to structures in seismically active areas of California. Section 1613 specifically provides structural design standards for earthquake loads.

Section 1803.5.11 and 1803.5.12 provide requirements for geotechnical investigations for structures assigned varying Seismic Design Categories in accordance with Section 1613. Additionally, the City of Manteca has adopted Design and Construction Standards and incorporated numerous policies relative to seismicity to ensure the health and safety of all people. Design in accordance with these standards and policies would reduce any potential impact to a less than significant level. Because all development in the project site must be designed in conformance with these state and local standards and policies, any potential impact would be considered ***less than significant***.

**Responses a.iii), c), d):** Liquefaction normally occurs when sites underlain by saturated, loose to medium dense, granular soils are subjected to relatively high ground shaking. During an earthquake, ground shaking may cause certain types of soil deposits to lose shear strength, resulting in ground settlement, oscillation, loss of bearing capacity, landsliding, and the buoyant rise of buried structures. The majority of liquefaction hazards are associated with sandy soils, silty soils of low plasticity, and some gravelly soils. Cohesive soils are generally not considered to be susceptible to liquefaction. In general, liquefaction hazards are most severe within the upper 50 feet of the surface, except where slope faces or deep foundations are present.

As noted above, California Geological Survey has defined the entire county as a seismic hazard zone. Significant liquefaction induced settlement is not generally anticipated at the site. However, based on the anticipated site conditions, some seismic settlement is generally anticipated.

Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical characteristic of clay-type soils. Expansive soils shrink and swell in volume during changes in moisture content, such as a result of seasonal rain events, and can cause damage to foundations, concrete slabs, roadway improvements, and pavement sections.

Soil expansion is dependent on many factors. The more clayey, critically expansive surface soil and fill materials will be subjected to volume changes during seasonal fluctuations in moisture content. Figure 9 shows the soils within the project site. The soils encountered at the site consist of mainly Timor loamy sands, with some Delhi loamy sands in the northeastern corner of the project site. The Timor series consists of deep to hardpan, moderately well drained soils that formed in granitic alluvium. The Delhi series consists of very deep, somewhat excessively drained soils that formed in wind modified material weathered from granitic rock sources. The potential for soil expansion to occur at the project site is generally considered low.

Future development of the project could expose people or structures to adverse effects associated with liquefaction and/or soil expansion. Construction of the project would be required to comply with the City's General Plan policies related to geologic and seismic hazards. These policies obligate the City to require that new development mitigate the potential impacts of geologic hazards through building plan review (Policy S-P-2) and mitigate the potential impacts of seismic-induced settlement of uncompacted fill and liquefaction due to the presence of a high-water table (Policy S-P-2). To that end, General Plan Policy S-P-1 requires that all proposed development prepare geological reports and/or geological engineering reports for projects located in areas of potentially significant geological hazards, including potential subsidence (collapsible surface soils) due to groundwater extraction.

With implementation of the following mitigation measure, this potential impact would be ***less than significant***.

*Mitigation Measure(s)*

**Mitigation Measure GEO-1:** *Prior to issuance of any building permits, the developer shall be required to submit building plans to the City of Manteca for review and approval. The building plans shall also comply with all applicable requirements of the most recent California Building Standards Code. All on-site soil engineering activities shall be conducted under the supervision of a licensed geotechnical engineer or certified engineering geologist.*

**Response b):** The project site is currently vacant and undeveloped. According to the project site plans prepared for the proposed project, development of the proposed project would result in the creation of new impervious surface areas throughout the project site. The development of the project site would also cause ground disturbance of top soil. The ground disturbance would be limited to the areas proposed for grading and excavation, including the proposed driveway areas, residential building pads, and drainage, sewer, and water infrastructure improvements. After grading and excavation, and prior to overlaying the disturbed ground surfaces with impervious surfaces and structures, the potential exists for wind and water erosion to occur, which could adversely affect downstream storm drainage facilities.

Without implementation of appropriate Best Management Practices (BMPs) related to prevention of soil erosion during construction, development of the project would result in a potentially significant impact with respect to soil erosion. Implementation of the following mitigation measures would ensure the impact is ***less than significant***.

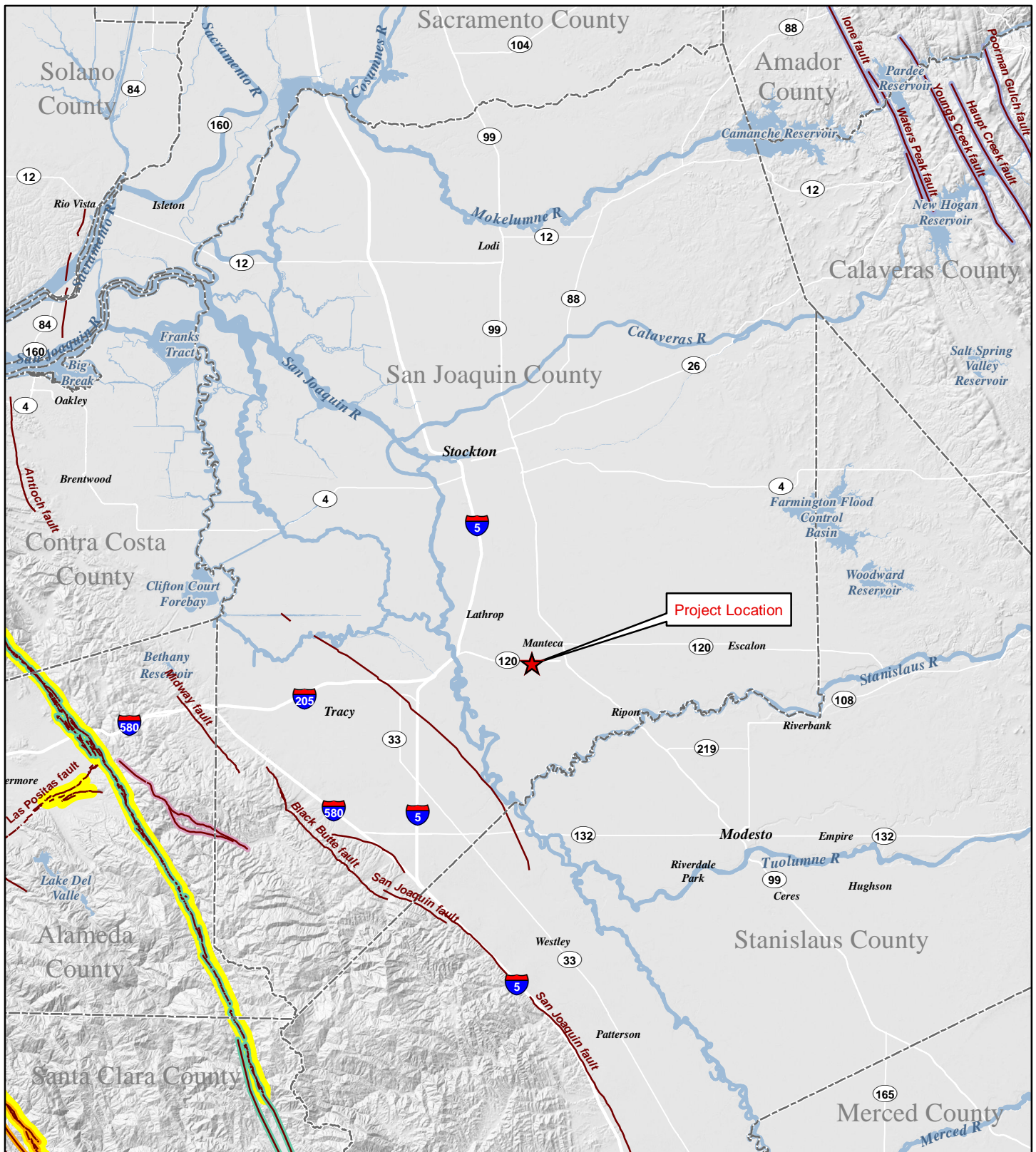
*Mitigation Measure(s)*

**Mitigation Measure GEO-2:** *The project applicant shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Manteca and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.*

**Response e):** The 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.

**Response f):** Known paleontological resources or sites are not located on the project site. Additionally, unique geologic features are not located on the site. The site is currently undeveloped and surrounded by existing or future urban development. As discussed in Section V, Cultural Resources, should artifacts or unusual amounts of stone, bone, or shell be uncovered during construction activities, an archeologist should be consulted for an evaluation. Implementation of Mitigation Measure CUL-1 would require investigations and avoidance methods in the event that a previously undiscovered cultural resource is encountered during construction activities. With implementation of Mitigation Measure CUL-1, impacts to paleontological resources or unique geologic features are not expected. This is a ***less than significant*** impact.

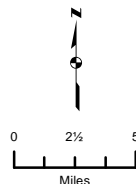




#### Legend

- Quaternary fault
- Foothills fault system
- Fault Zones**
- Calaveras fault zone
- Corral Hollow-Carnegie fault zone
- Greenville fault zone
- Alquist-Priolo Zone

Data sources: US Geologic Survey; CalAtlas. Map date: January 23, 2019.

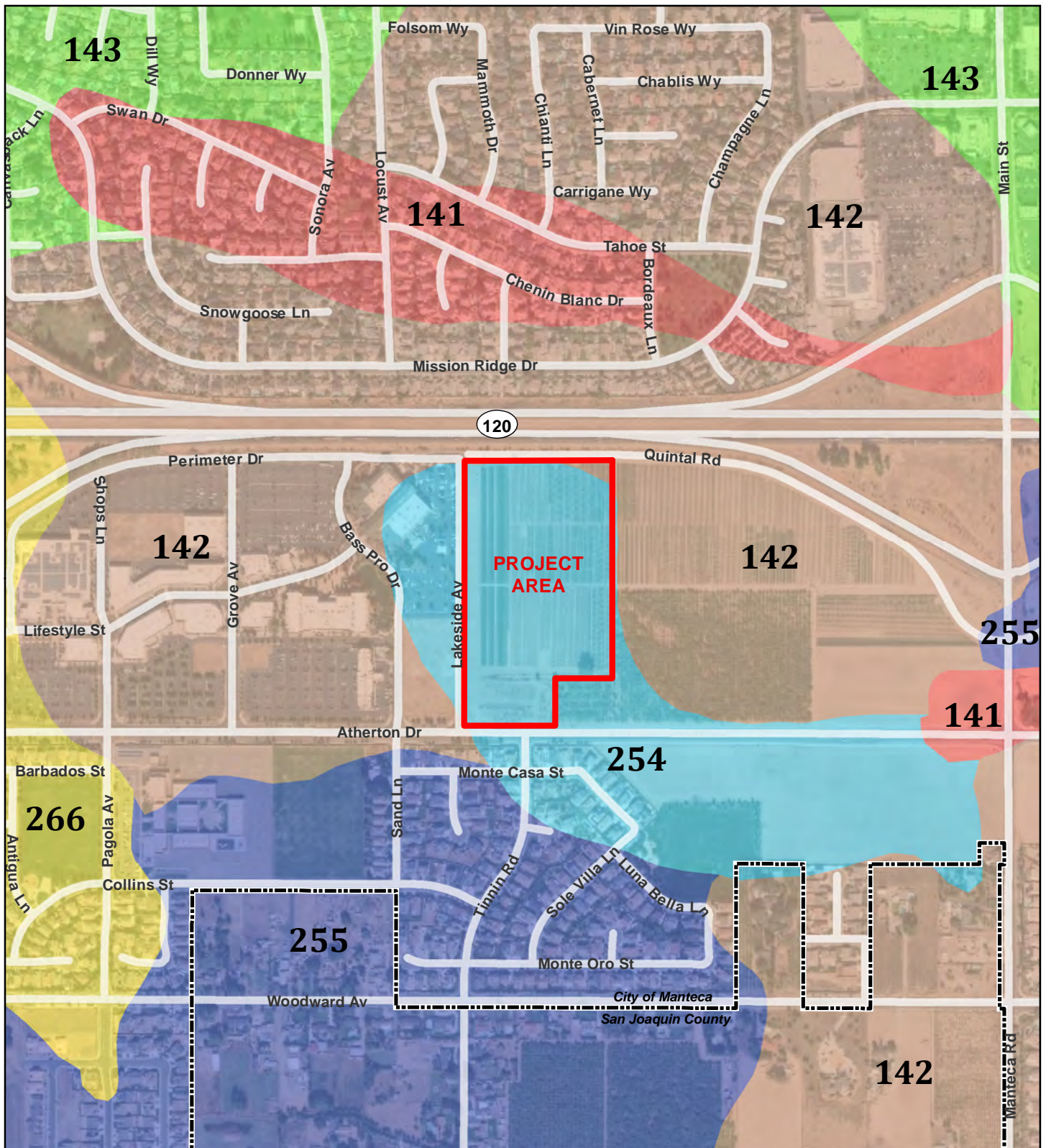


#### CITY OF MANTECA - VALENCIA APARTMENTS

Figure 8. Earthquake Fault Map

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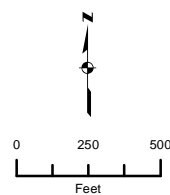




#### Legend

- 141 Delhi fine sand, 0-5% slopes
- 142 Delhi loamy sand, 0-2% slopes, MLRA 17 (0.43 ac onsite)
- 143 Delhi-Urban land complex, 0-2% slopes
- 254 Timor loamy sand, 0-2% slopes (19.15 ac onsite)
- 255 Tinnin loamy coarse sand, 0-2% slopes
- 266 Veritas fine sandy loam, 0-2% slopes

Sources: USDA Natural Resource Conservation Service, Gridded Soil Survey Geographic Database (gSSURGO), Version 2.2, December 2016; San Joaquin County; ArcGIS Online Imagery Map Service. Map date: January 23, 2019.



#### CITY OF MANTECA - VALENCIA APARTMENTS

Figure 9. Project Site Soils

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## 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		

### Background

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (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.

Naturally occurring greenhouse gases include water vapor (H<sub>2</sub>O), carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and ozone (O<sub>3</sub>). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. Although the direct greenhouse gases CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2011, concentrations of these three greenhouse gases have increased globally by 40, 150, and 20 percent, respectively [Intergovernmental Panel on Climate Change [IPCC], 2013].

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), ozone (O<sub>3</sub>), water vapor, nitrous oxide (N<sub>2</sub>O), and chlorofluorocarbons (CFCs).

The emissions from a single project will not cause global climate change, however, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change. Therefore, the analysis of GHGs and climate change presented in this section is presented in terms of the proposed project's contribution to cumulative impacts and potential to result in cumulatively considerable impacts related to GHGs and climate change.

Cumulative impacts are the collective impacts of one or more past, present, and future projects that, when combined, result in adverse changes to the environment. In determining the significance of a proposed project's contribution to anticipated adverse future conditions, a lead agency should generally undertake a two-step analysis. The first question is whether the *combined* effects from *both* the proposed project *and* other projects would be cumulatively significant. If the agency answers this inquiry in the affirmative, the second question is whether "the proposed project's *incremental* effects are cumulatively considerable" and thus significant in and of themselves. The cumulative project list for this issue (climate change) comprises anthropogenic (i.e., human-made) GHG emissions sources across the globe and no project alone would reasonably be expected to contribute to a noticeable incremental change to the global



climate. However, legislation and executive orders on the subject of climate change in California have established a statewide context and process for developing an enforceable statewide cap on GHG emissions. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies consider evaluating the cumulative impacts of GHGs. Small contributions to this cumulative impact (from which significant effects are occurring and are expected to worsen over time) may be potentially considerable and, therefore, significant.

### *Significance Thresholds*

Governor's Office of Planning and Research's (OPR's) Guidance does not include a quantitative threshold of significance to use for assessing a project's GHG emissions under CEQA. Moreover, the California Air Resources Board (CARB) has not established such a threshold or recommended a method for setting a threshold for project-level analysis. In the absence of a consistent statewide threshold, a threshold of significance for analyzing the project's GHG emissions was developed. The issue of setting a GHG threshold is complex and dynamic, especially in light of the California Supreme Court decision in *Center for Biological Diversity v. California Department of Fish and Wildlife* (referred to as the Newhall Ranch decision hereafter). The California Supreme Court ruling also highlighted the need for the threshold to be tailored to the specific project type, its location, and the surrounding setting. Therefore, the threshold used to analyze the project is specific to the analysis herein and the City retains the ability to develop and/or use different thresholds of significance for other projects in its capacity as lead agency and recognizing the need for the individual threshold to be tailored and specific to individual projects.

The SJVAPCD provides guidance for addressing GHG emissions under CEQA. The SJVAPCD guidance regarding evaluating GHG significance notes that if a project complies with an adopted statewide, regional, or local plan for reduction or mitigation of GHG emissions, then impacts related to GHGs would be less than significant. The applicable plan for reduction or mitigation of GHG emissions for the proposed project is the Manteca Climate Action Plan. Additionally, the SJVAPCD requires quantification of GHG emissions for all projects which the lead agency has determined that an EIR is required. Although an EIR is not required for the proposed project, the GHG emissions are quantified below, followed by a consistency analysis with the SJCOG RTP/SCS and the Manteca Climate Action Plan.

### *RESPONSES TO CHECKLIST QUESTIONS*

#### **Responses a) and b):**

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. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. Implementation of the proposed project would contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of CO<sub>2</sub> and other GHG pollutants, such as CH<sub>4</sub> and N<sub>2</sub>O, from mobile sources and utility usage.

The proposed project's short-term construction-related and long-term operational GHG emissions for Buildout of the proposed Project, were estimated using CalEEMod™ (v.2016.3.2). CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including



vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Emissions are expressed in annual metric tons of CO<sub>2</sub> equivalent units of measure (i.e., MTCO<sub>2e</sub>), based on the global warming potential of the individual pollutants.

### Short-Term Construction GHG Emissions

Estimated increases in GHG emissions associated with construction of the proposed project are summarized in Table 12.

**Table 12: Construction GHG Emissions (Unmitigated Metric Tons/Yr)**

<i>Year</i>	<i>Bio-CO<sub>2</sub></i>	<i>NBio-CO<sub>2</sub></i>	<i>Total CO<sub>2</sub></i>	<i>CH<sub>4</sub></i>	<i>N<sub>2</sub>O</i>	<i>CO<sub>2e</sub></i>
2019	0.0000	315.4067	315.4067	0.0589	0.0000	316.8803
2020	0.0000	683.7219	683.7219	0.0896	0.0000	685.9607
2021	0.0000	2.0549	2.0549	9.0000e-005	0.0000	2.0571
<b>Maximum</b>	<b>0.0000</b>	<b>683.7219</b>	<b>683.7219</b>	<b>0.0896</b>	<b>0.0000</b>	<b>685.9607</b>

SOURCE: CALCEMOD (v.2016.3.2).

As presented in the table, maximum short-term annual construction emissions of GHG associated with development of the project are estimated to be 685.9607 MTCO<sub>2e</sub> (2020) with a low of 2.0571 MTCO<sub>2e</sub> (2019) emitted. These construction GHG emissions are a one-time release and are comparatively much lower than emissions associated with operational phases of a project. Cumulatively, these construction emissions would not generate a significant contribution to global climate change.

### Long-Term Operational GHG Emissions

The long-term operational GHG emissions estimate for buildout of the proposed Project, incorporates the potential area source and vehicle emissions, and emissions associated with utility and water usage, and wastewater and solid waste generation. The modeling included mitigation inputs for the year 2021 including the following:

#### Traffic Mitigation

- Project Setting: Low Density Suburban
- Increase Density: 428 du/19.58 ac = 21.9 du/ac
- Increase Destination Accessibility: Distance to Downtown/Job Center is 1.05 miles (from project site to downtown Manteca)
- Increase Transit Accessibility: Distance to Transit is 0.0 miles (Manteca Transit Routes 2 and 3 pass by and stop at the project site frontage along W. Atherton Drive)
- Improve Pedestrian Network: Project Site and Connecting Off-Site (project includes connections from the site to the adjacent shopping center)

#### Energy Mitigation

- Exceed Title 24: 15% Improvement
  - Note: The project would meet or exceed this mitigation by conforming to the current version of the Title 24 Energy Efficiency Standards.
- Install High Efficiency Lighting: 16% Lighting Energy Reduction
  - Note: According to CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*, a minimum of a 16% reduction in electricity usage is expected compared with low-

efficiency lighting (i.e., metal halide post top lights as opposed to typical mercury cobrahead lights).

- Install High Efficiency Appliances: within all residences

#### Area Mitigation

- Only Natural Gas Hearth

#### Water Mitigation

- Install Low-flow Bathroom Faucets
- Install Low-flow Kitchen Faucets
- Install Low-flow Toilets
- Install Low-flow Showers
- Use Water-Efficient Irrigation Systems: CalEEMod Default % Reduction

Estimated GHG emissions associated with the buildout of the proposed project with and without the above mitigation incorporated are summarized in Tables 13 and 14. As shown in the tables, the annual GHG emissions associated with buildout of the proposed project would be 5,600.1376 MTCO<sub>2</sub>e with the above referenced mitigation incorporated and 6,034.7823 MTCO<sub>2</sub>e without mitigation. The mitigation results in a decrease of 434.6447 MTCO<sub>2</sub>e.

**Table 13: Operational GHG Emissions 2021 (Unmitigated Metric Tons/Yr)**

Category	Bio-CO <sub>2</sub>	NBio-CO <sub>2</sub>	Total CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Area	79.1565	190.6039	269.7604	0.3786	3.4000-e003	280.2390
Energy	0.0000	462.2823	462.2823	0.0282	9.0400e-003	465.6816
Mobile	0.0000	5,115.2320	5,115.2320	0.3391	0.0000	5,123.7088
Waste	39.9649	0.0000	39.9649	2.3619	0.0000	99.0113
Water	8.8469	27.9423	36.7892	0.9115	0.0220	66.1417
<b>Total</b>	<b>127.9683</b>	<b>5,796.0602</b>	<b>5,924.0285</b>	<b>4.0192</b>	<b>0.0345</b>	<b>6,034.7823</b>

SOURCE: CALEEMOD (v.2016.3.2).

**Table 14: Operational GHG Emissions 2021 (Mitigated Metric Tons/Yr)**

Category	Bio-CO <sub>2</sub>	NBio-CO <sub>2</sub>	Total CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Area	0.0000	190.6039	190.6039	8.5800e-003	3.4000e-003	191.8315
Energy	0.0000	427.5196	427.5196	0.0267	8.3800e-003	430.6839
Mobile	0.0000	4,816.2716	4,815.2716	0.3317	0.0000	4,824.5629
Waste	39.9649	0.0000	39.9649	2.3619	0.0000	99.0113
Water	7.0775	23.4789	30.5564	0.7293	0.0177	54.0482
<b>Total</b>	<b>47.0424</b>	<b>5,457.8740</b>	<b>5,504.9164</b>	<b>3.4581</b>	<b>0.0294</b>	<b>5,600.1376</b>

SOURCE: CALEEMOD (v.2016.3.2).

### **Regional Transportation Plan/Sustainable Communities Strategy**

SJCOG adopted the Final Draft of the RTP/SCS on June 2018. The RTP/SCS reflects a region-specific, balanced multimodal plan that only achieves the intent and promise of SB 375 and can be implemented through existing and planned programs or policies. The RTP/SCS foundation comprises recent household and job growth forecasts, market demand and economic studies, and

transportation studies including SJCOG's Smart Growth Transit Oriented Development Plan, Goods Movement Study, and Regional Bike/Pedestrian/Safe Routes to School Master Plan.

Chapter 3 of the RTP/SCS contains policies and supportive strategies in order to address the transportation needs of the San Joaquin region and quantify regional needs in the 25-year planning horizon. One of the strategies in Table 3.1 of the SJCOG RTP/SCS aims to optimize public transportation to provide efficient and convenient access for users at all income levels. Another strategy aims to provide transportation improvements to facilitate non-motorized travel. Manteca Transit Routes 2 and 3 currently run along the project site frontage on W. Atherton Drive. Route 2 originates at the City's Transit Center and travels clockwise along South Main Street, Atherton Drive, Daniels Street, Fishback Road, Yosemite Avenue, West Center Street, Union Road, Northgate Drive, London Avenue, Lathrop Road, and Main Street before returning back to the Transit Center. Route 3's alignment starts at the City's Transit Center and travels along North Main Street, Northgate Drive, Lathrop Road, London Avenue, Union Road, Cherry Lane, Center Street, Yosemite Avenue, Winters Drive, Fishback Road, Daniels Street, and Atherton Drive before returning to the Transit Center. Route 3 operates as a counter-clockwise loop complementing Route 2.

The Manteca Transit Center is located approximately 0.9 miles northeast of the project site. Manteca Transit provides a Route 3 bus stop near the intersection of Tinnin Road and W. Atherton Drive, located approximately 0.02 miles south of the project site. Therefore, the proposed project would be located in an area that is currently served by Manteca Transit.

As demonstrated above, the proposed project would be generally consistent with the goals and strategies of the RTP/SCS.

### **Manteca Climate Action Plan**

The City of Manteca Climate Action Plan (2013) sets forth a feasible strategy to reduce community-generated GHG emissions, consistent with statewide GHG reduction efforts for consideration and potential adoption by the City Council.

The Climate Action Plan contains strategies by emissions sector (i.e., land use and transportation, transportation facilities and demand strategies, energy conservation, waste diversion and recycling and energy recovery, strategies for existing development, and municipal strategies). Only some of the reduction measures would apply to the proposed project. For example, Strategy CD-1 encourages projects that are consistent with the development densities allowed by the General Plan and are contiguous to existing development. The proposed project is consistent with the densities allowed by the CMU land use designation and is adjacent to existing residential and commercial development. Strategy MUD-1 encourages mixed use residential developments that either allow for sufficient population to support commercial development within the project or are constructed in an area with an existing variety of commercial development within walking distance and is already supported by surrounding residential development. The project site is adjacent to an existing commercial development to the west and is already supported by surrounding residential development.

Additionally, Strategy ENB-1 requires all new development to exceed Title 24 standards by at least 10 percent. The proposed project will comply with Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards. This includes the CALGreen requirements for new buildings to reduce water consumption by 20 percent, and install low pollutant-emitting materials. Further, Strategies POD-1 through POD-5 encourage the

development of pedestrian infrastructure. The project would incorporate continuous sidewalks along the southern and western site boundaries as well as internal trails, and would provide pedestrian connections to the adjacent commercial development.

As demonstrated above, the proposed project would be generally consistent with the goals and strategies of the Manteca Climate Action Plan.

### **Conclusion**

The maximum short-term annual construction emissions of GHG associated with development of the project are estimated to be 685.9607 MTCO<sub>2</sub>e (2020) with a low of 2.0571 MTCO<sub>2</sub>e (2019) emitted. As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the proposed project. The annual operational GHG emissions associated with buildout of the proposed project would be 5,600.1376 MTCO<sub>2</sub>e with the above referenced mitigation incorporated and 6,034.7823 MTCO<sub>2</sub>e without mitigation. The mitigation results in a decrease of 434.6447 MTCO<sub>2</sub>e.

Additionally, the project would be generally consistent with the goals, policies, and measures of the RTP/SCS and the Manteca Climate Action Plan. The project is currently served by Manteca Transit who provides bus services adjacent to the project site. The project would also comply with Strategies CD-1, MUD-1, ENB-1, and POD-1 through POD-5 of the Climate Action Plan. Therefore, impacts related to GHG emissions and global climate change would be considered ***less than significant***.

**IX. HAZARDS AND HAZARDOUS MATERIALS**

<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) 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	

**Responses to Checklist Questions**

**Responses a), b):** The proposed project would place residential uses in an area of the City that currently contains residential and commercial uses. The proposed residential land uses do not routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common hazardous materials such as household cleaners, paint, etc. The operational phase of the proposed project does not pose a significant hazard to the public or the environment.

Onsite reconnaissance and historical records indicate that there are no known underground storage tanks or pipelines located on the project site that contain hazardous materials. Therefore, the disturbance of such items during construction activities is unlikely. Construction equipment and materials would likely require the use of petroleum based products (oil, gasoline, diesel fuel), and a variety of common chemicals including paints, cleaners, and solvents. Transportation, storage, use, and disposal of hazardous materials during construction activities would be required to comply with applicable federal, state, and local statutes and regulations. Compliance

would ensure that human health and the environment are not exposed to hazardous materials. Therefore, the proposed project would have a ***less than significant*** impact relative to this issue.

**Response c):** The project site is located within ¼ mile of an existing school. The closest school is Veritas School which is located approximately 0.1 miles or further southwest of the site. Although the site is within the ¼-mile radius of a school, the operations of a residential subdivision would not emit hazardous emissions or result in the storage or handling of hazardous or acutely hazardous materials, substances or waste above the level of existing conditions. Implementation of the proposed project would result in a ***less than significant*** impact relative to this topic.

**Response d):** According the California Department of Toxic Substances Control (DTSC) there are no Federal Superfund Sites, State Response Sites, or Voluntary Cleanup Sites on, or in the near vicinity of the project site. The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5. The nearest investigation sites include:

- Karlson Trucking, Manteca (site SL185882949): This site is a Cleanup Program Site which has a current status of Completed – Case Closed as of May 20, 2009. The site had potential soil contamination of petroleum/fuel.
- Sand Lane Elementary (site # 39020001): This site is a School Investigation which has a current status of No Further Action as of July 24, 2002. This 18-acre site is currently being used as a pasture for cattle grazing. The site consists of two rural residential structures and farming structures. The site has primarily been used as fallow field or pasture land from at least 1937. The site had potential soil contamination of metals and/or pesticides.

Implementation of the proposed project would result in a ***less than significant*** impact relative to this environmental topic.

**Response e):** 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. The closest airport or airstrip is the Stockton Metropolitan Airport, located approximately 7.1 miles north of the project site. Implementation of the proposed project would have a ***less than significant*** impact with regards to this environmental issue.

**Response f):** The Office of Emergency Services (OES) maintains an Emergency Operations Plan (EOP) that serves as the official Emergency Plan for San Joaquin County. It includes planned operational functions and overall responsibilities of County Departments during an emergency situation. The Emergency Plan also contains a threat summary for San Joaquin County, which addresses the potential for natural, technological and human-caused disasters (County Code, Title 4-3007).

The County OES also prepared a Hazardous Materials Area Plan (§2720 H&S, 2008) that describes the hazardous materials response system developed to protect public health, prevent environmental damage and ensure proper use and disposal of hazardous materials. The plan 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. This plan is now implemented by the San Joaquin County Environmental Health Department.

The San Joaquin County Environmental Health Department maintains a Hazardous Materials Management Plan/ Hazardous Materials Business Plan (HMMP/HMBP). The HMMP/HMBP



describes agency roles, strategies and processes for responding to emergencies involving hazardous materials. The Environmental Health Department maintains a Hazardous Materials Database and Risk and Flood Maps available to the public on its website.

In San Joaquin County, all major roads are available for evacuation, depending on the location and type of emergency that arises. The proposed project does not include any actions that would impair or physically interfere with any of San Joaquin County's 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 the emergency vehicle access or evacuation in the event of an emergency. Implementation of the proposed project would have a *less than significant* impact with regards to this environmental issue.

**Response g):** 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, 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. 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.

The City of Manteca contains areas with "moderate" and "non-wildland fuel" ranks. The areas warranting "moderate" fuel ranks possess combustible material in sufficient quantities combined with topographic characteristics that pose a wildfire risk. CalFire data for the areas immediately surrounding the Planning Area also include "moderate" and "non-wildland fuel" ranks. Areas west of Interstate 5, approximately 15 miles or further southwest of the Planning Area, are designated as "moderate" and "high" fuel ranks.

The project site is located in an area with a "moderate" rank. The site is not located on a steep slope, and the site is essentially flat. The project site is also located in an urban area, with existing or future urban development located on all sides. The project will comply with city standards for fire hydrants and fire sprinklers, and access to and from the project site is sufficient. 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	

*Responses to Checklist Questions*

**Response a):** Implementation of proposed project would not violate any water quality or waste discharge requirements. Construction activities including grading 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 GEO-2 would require the preparation of a SWPPP to ensure that the proposed project prepares and implements a SWPPP throughout the construction phase of the project. Furthermore, the proposed project includes a preliminary grading and drainage plan that has a specific drainage plan designed to control storm water runoff and erosion, both during and after construction. The SWPPP (Mitigation Measure Geo-3) and the project specific drainage plan would reduce the potential for the proposed project to violate water quality standards during construction. Implementation of the proposed project would result in a *less-than-significant* impact relative to this topic.

**Response b):** The proposed project would connect to the City of Manteca water system. The City's municipal water supply includes deliveries from the South San Joaquin Irrigation District's (SSJID) South County Water Supply Program (SCWSP), and local groundwater pumped from the City's wells.

The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted). The City's 2023 General Plan designates the project area as CMU, which allows for residential densities of up to 25 dwelling units per acre. Therefore, the City's 2023 General Plan anticipated up to 489 units and an associated population of 1,457 persons within the project area.

Project construction would add additional impervious surfaces to the project site; however, various areas of the project site would remain largely pervious, which would allow infiltration to underlying groundwater. For example, the project proposes to include two large drainage basins and various bio-retention areas and bioswales throughout the project site. Additionally, the project includes ample landscaping areas that would remain pervious. These areas would continue to contribute to groundwater recharge following construction of the project. Furthermore, the project is not anticipated to significantly affect groundwater quality because sufficient stormwater infrastructure would be constructed as part of project to detain and filter stormwater runoff and prevent long-term water quality degradation. Therefore, project construction and operation would not substantially deplete or interfere with groundwater supply or quality. This impact would be *less than significant*.

**Responses c), e):** When land is in a natural or undeveloped condition, precipitation will infiltrate/percolate the soils and mulch. Much of the rainwater that falls on natural or undeveloped land slowly infiltrates the soil and is stored either temporarily or permanently in underground layers of soil. When the soil becomes completely soaked or saturated with water or the rate of rainfall exceeds the infiltration capacity of the soil, the rainwater begins to flow on the surface of land to low lying areas, ditches, channels, streams, and rivers. Rainwater that flows off of a site is defined as storm water runoff. When a site is in a natural condition or is undeveloped, a larger percentage of rainwater infiltrates into the soil and a smaller percentage flows off the site as storm water runoff.

The infiltration and runoff process is altered when a site is developed with urban uses. Houses, buildings, roads, and parking lots introduce asphalt, concrete, and roofing materials to the landscape. These materials are relatively impervious, which means that they absorb less rainwater. As impervious surfaces are added to the ground conditions, the natural infiltration process is reduced. As a result, the volume and rate of storm water runoff increases. The increased volumes and rates of storm water runoff can result in flooding in some areas if adequate storm drainage facilities are not provided.

There are no rivers, streams, or water courses located on or immediately adjacent to the project site. As such, there is no potential for the project to alter a water course, which could lead to on or offsite flooding. Drainage improvements associated with the project site would be located on the project site, and the project would not alter or adversely impact offsite drainage facilities.

The proposed project would require the installation of storm drainage infrastructure to ensure that storm waters properly drain from the project site. The proposed storm drainage plan

includes an engineered network of storm drain lines, bioswales, and bio-retention basins. The project proposes to include two drainage basins: a basin in the northern half of the site (with 2.38 ac-ft of storage potential in the basin and 0.34-ac-ft of storage potential in the bio-retention area), and another basin in the southern half of the site (with 2.41-ac-ft of storage potential in the basin and 0.37-ac-ft of storage potential in the bio-retention area). Additionally, various bio-retention areas and bioswales would be located throughout the project site. The storm drainage plan was designed and engineered to ensure proper construction of storm drainage infrastructure to control runoff and prevent flooding, erosion, and sedimentation.

The ongoing operational phase of the proposed project requires the final discharge of stormwater into the on-site bio-retention basins. The discharge of stormwater must be treated through BMPs prior to its discharge. The City of Manteca implements best management practices to the extent they are technologically achievable to prevent and reduce pollutants. Under the City's standard practices, the owner or operator shall provide reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses. Facilities to prevent accidental discharge of prohibited materials or other wastes shall be provided and maintained at the owner or operator's expense.

Mitigation Measure HYDRO-1 will require that the storm drainage plan be designed to ensure that post-project runoff is equal to or less than pre-project runoff. The storm drainage plan will require the construction of new storm water drainage facilities on the project site; however, the construction of these facilities would not substantially alter the existing drainage pattern of the area, or alter the course of a stream or river. Implementation of the proposed project with the following mitigation measure would have a ***less-than-significant*** impact relative to this environmental topic.

*Mitigation Measure(s)*

**Mitigation Measure HYDRO-1:** *The storm drainage plan shall be designed and engineered to ensure that post-project runoff is equal to or less than pre-project runoff. The applicant shall provide the City Engineer with all stormwater runoff calculations with the improvement plan submittal.*

**Response d):** As shown in Figure 10, the project site is located within Flood Zone X, which is not within the 100-year flood zone as shown on the Flood Insurance Rate Map (FIRM). The closest 100-year flood zone is located to the south, outside of the project site.

Further, in 2007, the State of California passed a series of laws referred to as Senate Bill (SB) 5 directing the Department of Water Resources (DWR) to prepare flood maps for the Central Valley flood system and the State Plan of Flood Control, which includes a system of levees and flood control facilities located in the Central Valley. This legislation also set specific locations within the area affected by the 200-year flood event as the urban level of flood protection (ULOP) for the Central Valley.

SB5 "requires all cities and counties within the Sacramento-San Joaquin Valley, as defined in California Government Code Sections 65007(h) and (j), to make findings related to an ULOP or national Federal Emergency Management Agency (FEMA) standard of flood protection before: (1) entering into a development agreement for any property that is located within a flood hazard zone; (2) approving a discretionary permit or other discretionary entitlement, or ministerial permit that would result in the construction of a new residence, for a project that is located within a flood hazard zone; or (3) approving a tentative map, or a parcel map for which a tentative map was not required, for any subdivision that is located within a flood hazard zone." The City of Manteca completed its General Plan update in May 2016 to meet the requirements of SB 5.

As shown in Figure 11, the project site is located within a dam inundation area for the New Melones Dam and the San Luis Dam. Dam failure is generally a result of structural instability caused by improper design or construction, instability resulting from seismic shaking, or overtopping and erosion of the dam. Larger dams that are higher than 25 feet or with storage capacities over 50 acre-feet of water are regulated by the California Dam Safety Act, which is implemented by the California Department of Water Resources, Division of Safety of Dams (DSD). The DSD is responsible for inspecting and monitoring these dams. The Act also requires that dam owners submit to the California Office of Emergency Services inundation maps for dams that would cause significant loss of life or personal injury as a result of dam failure. The County Office of Emergency Services is responsible for developing and implementing a Dam Failure Plan that designates evacuation plans, the direction of floodwaters, and provides emergency information.

Regular inspection by DSD and maintenance by the dam owners ensure that the dams are kept in safe operating condition. As such, failure of these dams is considered to have an extremely low probability of occurring and is not considered to be a reasonably foreseeable event.

The proposed project would not expose people or structures to a significant risk of loss, injury or death involving flooding as a result of the failure of a levee or dam.

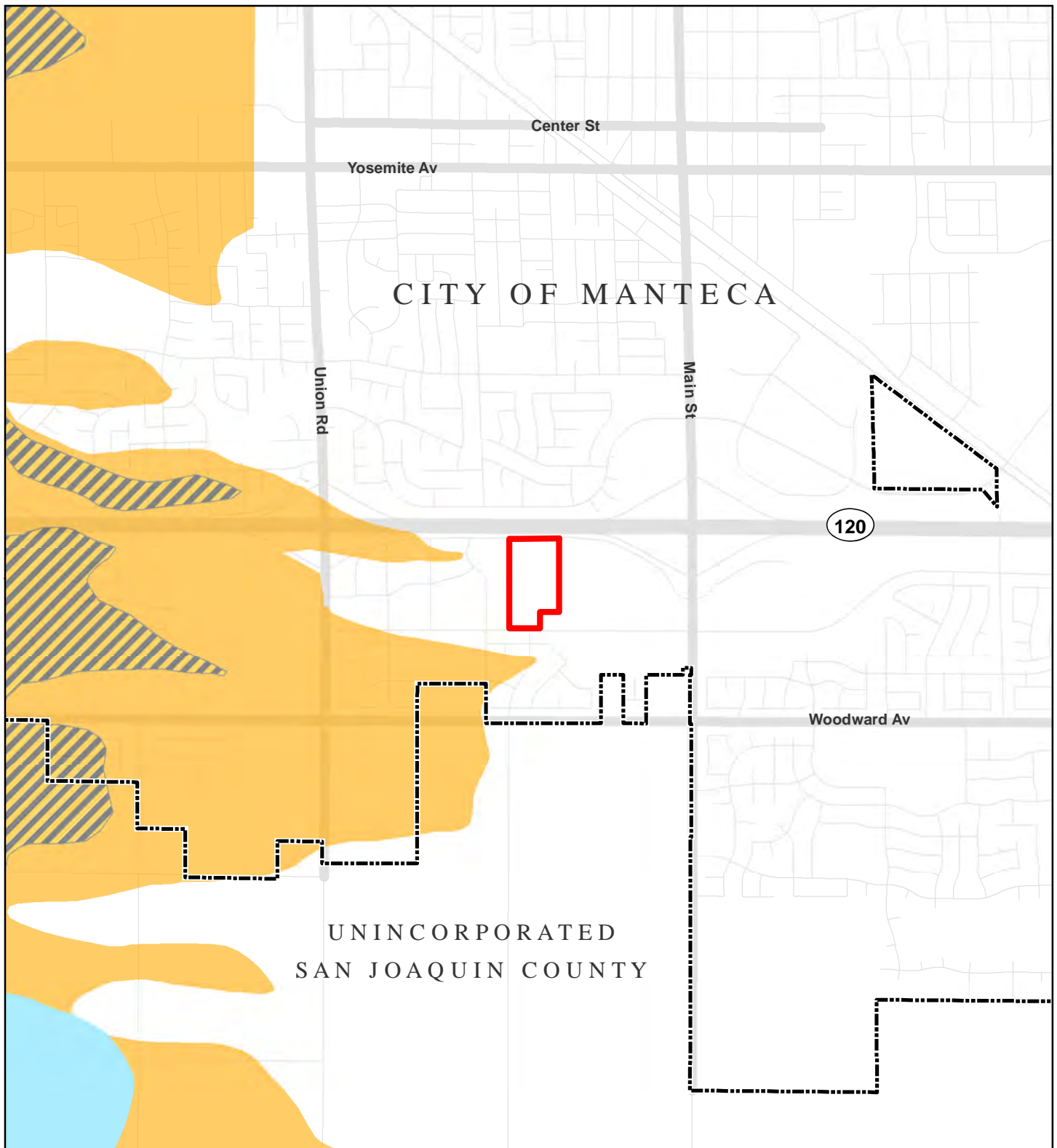
The project site is not anticipated to be inundated by a tsunami because it is located at an elevation of 34 to 38 feet above sea level and is approximately 60 miles away from the Pacific Ocean which is the closest ocean waterbody.

The project site is not anticipated to be inundated by a seiche because it is not located in close proximity to a water body capable of creating a seiche.

Implementation of the proposed project would have a ***less than significant*** impact relative to flood hazards, seiches, and tsunamis.



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#### Legend


 Project Boundary

#### FEMA Designation

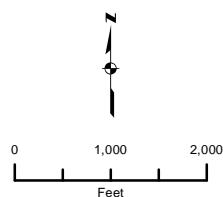
 1% Annual Chance Flood Hazard (100-yr Flood)

 0.2% Annual Chance Flood Hazard (500-yr Flood)

 unshaded Area of Minimal Flood Hazard

 Area with Reduced Risk Due to Levee

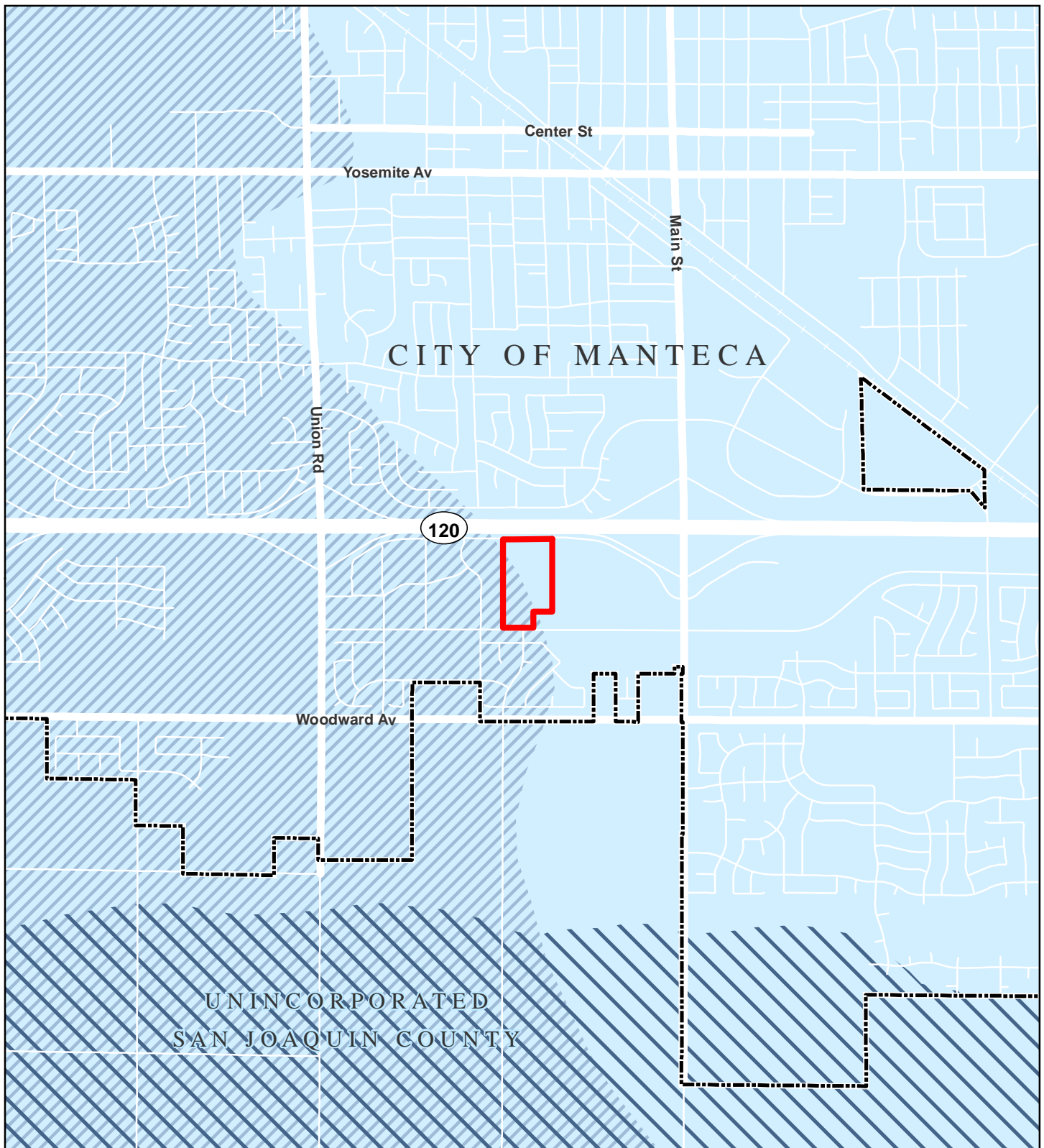
Sources: FEMA's National Flood Hazard Layer (Official);  
San Joaquin County. Map date: January 23, 2019.



#### CITY OF MANTECA - VALENCIA APARTMENTS

Figure 10. FEMA Flood Insurance  
Rate Map

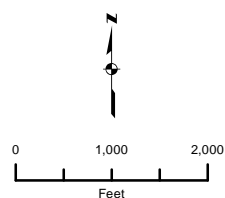
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#### Legend

- Project Boundary
- Manteca City Boundary
- New Melones Dam Inundation Area
- San Luis Dam Inundation Area
- Tulloch Dam Inundation Area

Sources: FEMA's National Flood Hazard Layer (Official); San Joaquin County; ArcGIS Online Imagery Map Service. Map date: January 23, 2019.



#### CITY OF MANTECA - VALENCIA APARTMENTS

Figure 11. Dam Inundation Map

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## 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	

### *Responses to Checklist Questions*

**Response a):** The project site is located within the Manteca city limits and is adjacent primarily to residential uses, commercial uses, and vacant agricultural land. The proposed residential apartment complex is consistent with the surrounding uses to the north and south and would not physically divide an established community. Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

**Response b):** The key planning documents that are directly related to, or that establish a framework within which the proposed project must be consistent, include:

- City of Manteca General Plan; and
- City of Manteca Zoning Ordinance.

The project site is designated as CMU by the City's General Plan Land Use Map and is zoned as CMU.

The CMU designation accommodates a variety of purposes including high density residential, employment centers, retail commercial, and professional offices. The mixed use concept is intended to integrate a mix of compatible uses on a single site that include sales, services, and activities which residents may need on a daily basis. With pedestrian access, these sites will enable residents to walk or bike for many local trips, instead of driving for convenience trips. The sites may be integrated vertically with mixed uses above one another, such as residential or office uses over a commercial use. Sites may also be mixed horizontally with the uses side-by-side, but linked together through common walkways, plazas and parking areas. In-fill sites in the existing urban area, particularly along the Main Street, Airport Way and Yosemite Avenue corridors may be developed entirely as multi-family residential projects. Sites developed primarily as residential may also include office and retail components. The CMU designation may also be applied to smaller parcels within neighborhoods. These small parcels accommodate a variety of uses, but on a smaller, less intense scale that is compatible with the adjacent residential use. The allowed density within the CMU designation is 15.1 to 25 dwelling units per acre. With 428 units on 19.58 acres, the proposed density would be 21.9 dwelling units per acre, which is within the allowed density range.

The CMU zone accommodates a variety of uses including high-density residential, employment centers, retail commercial, and professional offices.

The proposed project would not require changes to any land use or zoning designations, and is supportive to the utility demands for each of these uses. Therefore, impacts to land use compatibility would be ***less than significant***.

## 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

### *Responses to Checklist Questions*

**Response a):** There are no significant deposits of mineral resources located on the project site, as delineated by the Mineral Resources and Mineral Hazards Mapping Program (MRMHMP). The project site is not designated as a Mineral Resource Zone (MRZ). Additionally, there are no oil and gas extraction wells within or near the property. Implementation of the proposed project would have **no impact** relative to this issue.

**Response b):** The project site does not contain a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. As noted above, known mineral resources that would be of value to the region no longer exist within the project site. The proposed project would not result in loss of a mineral resource. Implementation of the proposed project would have **no impact** relative to this issue.

### XIII. NOISE

<i>Would the project result in:</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) 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

The following is based on the *Environmental Noise Analysis* that was completed for the project by j.c. brennan & associates (March 2019).

#### Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large range of numbers. The decibel (dB) scale is used to facilitate graphical visualization of large ranges of numbers. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a graphically practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels correspond closely to human perception of relative loudness.

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 A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels and are expressed in units of dBA, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound power levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

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 environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level ( $L_{eq}$ ), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The  $L_{eq}$  is the foundation of the composite noise descriptor,  $L_{dn}$ , and shows very good correlation with community response to noise.

The day/night average level ( $L_{dn}$ ) is based upon the average noise level over a 24-hour day, with a +10 decibel weighting applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because  $L_{dn}$  represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to  $L_{dn}$ , but includes a +5 dBA penalty for evening noise. Typically CNEL and  $L_{dn}$  values are within 0.5 dBA of each other and are often considered to be synonymous. Table 14 lists several examples of the noise levels associated with common situations.

**Table 14: Typical Noise Levels**

<i>Common Outdoor Activities</i>	<i>Noise Level (dBA)</i>	<i>Common Indoor Activities</i>
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office
Quiet Urban Nighttime	--40--	Theater, Large Conference Room
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. NOVEMBER 2009.

### *Effects of Noise on People*

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dBA per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

### *Existing Noise Levels – Traffic Noise*

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD 77-108) was used to develop  $L_{dn}$  (24-hour average) noise contours for the primary project-area roadways. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. To predict  $L_{dn}$  values, it is necessary to determine the hourly distribution of traffic for a typical 24-hour period.

Existing traffic volumes were obtained from the traffic consultant (Fehr & Peers, February 2019), and from Caltrans traffic counts. Day/night traffic distributions were based upon file data for similar roadways and field-measured values where available. Using these data sources and the FHWA traffic noise prediction methodology, traffic noise levels were calculated for existing conditions. Table 15 shows the results of this analysis. Appendix B provides the complete inputs and results for the FHWA modeling.

Traffic noise levels are predicted at 75 feet from the centerline of the roadway and at the sensitive receptors at the project site. In some locations, sensitive receptors in the vicinity of the project site may be located at distances which vary from the assumed calculation distance of 75 feet and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in the noise analysis.



**Table 15: Predicted Existing Traffic Noise Levels**

Roadway	Segment	Noise Level at 75 feet ( $L_{dn}/CNEL$ )	Distances to Traffic Noise Contours, $L_{dn}/CNEL$ (feet)		
			70 dBA	65 dBA	60 dBA
Atherton Dr.	West of Lakeside Ave.	63 dB	27	58	124
Atherton Dr.	West of Valencia Pl.	63 dB	27	57	123
Atherton Dr.	East of Valencia Pl.	63 dB	25	54	117
SR 120	At Project Site	80 dB	345	744	1603

NOTE: DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.

SOURCES: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS AND J.C. BRENNAN & ASSOCIATES, INC. 2019.

The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, grade, shielding from local topography or structures, elevated roadways, or elevated receivers. The distances reported in Table 15 are generally considered to be conservative estimates of noise exposure along the project-area roadways.

### Community Noise Survey

A community noise survey was conducted to document existing ambient noise levels at the project site on February 20 and 21, 2019. The data collected included the hourly average ( $L_{eq}$ ), median ( $L_{50}$ ), and the maximum level ( $L_{max}$ ) during the measurement period. Noise monitoring sites and the measured noise levels at each site are summarized in Table 16. Figure 12 shows the locations of the noise monitoring sites.

**Table 16: Summary of Existing Background Noise Measurement Data**

Site	Location	CNEL/ L <sub>dn</sub>	Average Measured Hourly Noise Levels, dBA					
			Daytime (7am-10pm)			Nighttime (10pm-7am)		
			L <sub>eq</sub>	L <sub>50</sub>	L <sub>max</sub>	L <sub>eq</sub>	L <sub>50</sub>	L <sub>max</sub>
Continuous (24-hour) Noise Level Measurements								
A	North Property Line	80.0 dB	74.5	67.9	85.0	73.4	71.0	84.4
B	South Property line	64.2 dB	58.6	57.8	69.3	57.6	56.8	66.7
Short-Term Noise Level Measurements								
1	300-feet from Bass Pro Shop Loading Dock	--	60.6	60.1	69.1	Loading bay is active. 2 semi-trucks and UPS Delivery. Mostly SR 120 traffic.		
2	100-feet from Atherton Road Centerline	--	59.2	55.5	74.1	Mostly SR 120 traffic. Some traffic from Atherton 100-feet from Atherton Road Centerline		

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2019.

Community noise monitoring equipment included a Larson Davis Laboratories (LDL) Model 820 and Model 824 precision integrating sound level meters equipped with an LDL ½" microphone. The measurement systems were calibrated using a LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters. Appendix B provides the complete noise monitoring results.

Based upon the measured background noise levels, the following observations are provided:

- The project is currently exposed to traffic noise levels which exceed the City standards;
- The commercial development to west which includes the Bass Pro loading dock. However, the noise environment is dominated by SR 120 traffic.

### *Regulatory Setting – Manteca General Plan*

The City of Manteca General Plan Noise Element contains goals, policies, and implementation measures for assessing noise impacts within the City. Listed below are the noise goals, policies, and implementation measures that are applicable to the proposed project:

#### **Goals**

- N-1. Protect the residents of Manteca from the harmful and annoying effects of exposure to excessive noise.
- N-3. Ensure that the downtown core noise levels remain acceptable and compatible with commercial and higher density residential land uses.
- N-4. Protect public health and welfare by eliminating existing noise problems where feasible, by establishing standards for acceptable indoor and outdoor noise, and by preventing significant increases in noise levels.
- N-5. Incorporate noise considerations into land use planning decisions, and guide the location and design of transportation facilities to minimize the effects of noise on adjacent land uses.

#### **Policies**

- N-P-2. New development of residential or other noise-sensitive land uses will not be permitted in noise-impacted areas unless effective mitigation measures are incorporated into the project design to satisfy the performance standards in Table 9-1 (Table 17 of this section).
- N-P-3. The City may permit the development of new noise-sensitive uses only where the noise level due to fixed (non-transportation) noise sources satisfies the noise level standards of Table 9-2. Noise mitigation may be required to meet Table 9-2 performance standards (Table 18 of this section).
- N-P-5. In accord with the Table 9-2 standards, the City shall regulate construction-related noise impacts on adjacent uses.

#### **Implementation Measures**

- N-I-1. New development in residential areas with an actual or projected exterior noise level of greater than 60 dB  $L_{dn}$  will be conditioned to use mitigation measures to reduce exterior noise levels to less than or equal to 60 dB  $L_{dn}$ .
- N-I-3. In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels are increased by 10 dB or more. An increase from 5-10 dB may be substantial. Factors to be considered in determining the significance of increases from 5-10 dB include:
  - the resulting noise levels
  - the duration and frequency of the noise
  - the number of people affected

- the land use designation of the affected receptor sites
- public reactions or controversy as demonstrated at workshops or hearings, or by correspondence
- prior CEQA determinations by other agencies specific to the project

N-I-4. Control noise at the source through use of insulation, berms, building design and orientation, buffer space, staggered operating hours and other techniques. Use noise barriers to attenuate noise to acceptable levels.

**Table 17: Maximum Allowable Noise Exposure Mobile Noise Sources**

MAXIMUM ALLOWABLE NOISE EXPOSURE MOBILE NOISE SOURCES			
Land Use <sup>1</sup>	Outdoor Activity Areas <sup>2</sup>	Interior Spaces	
		L <sub>dn</sub> /CNEL, dB	Leq, dB <sup>3</sup>
Residential	60 <sup>4</sup>	45	
Transient Lodging	60 <sup>4</sup>	45	
Hospitals, Nursing Homes	60 <sup>4</sup>	45	
Theaters, Auditoriums, Music Halls			35
Churches, Music Halls	60 <sup>4</sup>		40
Office Buildings	65 <sup>4</sup>		45
Schools, Libraries, Museums			45
Playgrounds, Neighborhood Parks	70		

<sup>1</sup>Outdoor activity areas for residential development are considered to be backyard patios or decks of single family dwellings, and the common areas where people generally congregate for multi-family developments. Outdoor activity areas for non-residential developments are considered to be those common areas where people generally congregate, including pedestrian plazas, seating areas, and outside lunch facilities. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

<sup>2</sup>In areas where it is not possible to reduce exterior noise levels to 40 dB L<sub>dn</sub> or below using a practical application of the best noise-reduction technology, an exterior noise level of up to 65 L<sub>dn</sub> will be allowed.

<sup>3</sup>Determined for a typical worst-case hour during periods of use.

<sup>4</sup>Where a proposed use is not specifically listed on the table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the City.

SOURCE: MANTECA GENERAL PLAN, TABLE 9-1.

**Table 18: Performance Standards for Stationary Noise Sources or Projects Affected by Stationary Noise Sources**

PERFORMANCE STANDARDS FOR STATIONARY NOISE SOURCES OR PROJECTS AFFECTED BY STATIONARY NOISE SOURCES <sup>1,2</sup>		
Noise Level Descriptor	Daytime	Nighttime
	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.
Hourly Leq, dB	50	45
Maximum Level, dB	70	65

<sup>1</sup>Each of the noise levels specified above should be lowered by five (5) dB for simple noise tones, noises consisting primarily of speech or music, or recurring impulsive noises. Such noises are generally considered by residents to be particularly annoying and are a primary source of noise complaints.

<sup>2</sup>No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.

SOURCE: MANTECA GENERAL PLAN, TABLE 9-2.

### *Regulatory Setting – Manteca Noise Ordinance*

Section 9.52.030 of the City of Manteca Municipal Code prohibits excessive or annoying noise or vibration to residential and commercial properties in the City. The following general rules are outline in the ordinance:

#### **9.52.030 Prohibited noises—General standard**

No person shall make, or cause to suffer, or permit to be made upon any public property, public right-of-way or private property, any unnecessary and unreasonable noises, sounds or vibrations which are physically annoying to reasonable persons of ordinary sensitivity or which are so harsh or so prolonged or unnatural or unusual in their use, time or place as to cause or contribute to the unnecessary and unreasonable discomfort of any persons within the neighborhood from which said noises emanate or which interfere with the peace and comfort of residents or their guests, or the operators or customers in places of business in the vicinity, or which may detrimentally or adversely affect such residences or places of business. (Ord. 1374 § 1(part), 2007)

#### **17.58.050 D. Exempt Activities**

8. Construction activities when conducted as part of an approved Building Permit, except as prohibited in Subsection 17.58.050(E)(1) (Prohibited Activities) below.

#### **17.58.050 E. Prohibited Activities**

1. Construction Noise. Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work daily between the hours of 7:00 p.m. and 7:00 a.m., so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

### *Responses to Checklist Questions*

#### **Response a):**

#### **Construction Noise**

The new development, maintenance of roadways, installation of public utilities, and infrastructure improvements associated with the project will require construction activities. These activities include the use of heavy equipment and impact tools. Table 19 provides a list of the types of equipment which may be associated with construction activities and the associated noise levels.

Activities involved in project construction would typically generate maximum noise levels ranging from 85 to 90 dBA at a distance of 50 feet. The nearest residential receptors would be located a minimum of 350-feet or more from the majority of project construction activities. At this distance, construction related activities are predicted to generate maximum noise levels ranging between 61 to 73 dB  $L_{max}$ . Based upon the daytime maximum noise levels of 63 to 81 dB  $L_{max}$ , maximum noise levels due to project construction are predicted to be within the range or less than existing maximum noise levels at the nearest sensitive receptors.

Construction could result in periods of elevated ambient noise levels and the potential for annoyance. However, predicted maximum noise levels associated with project construction are predicted to be less than existing average maximum ( $L_{max}$ ) noise levels, as measured at the

nearest sensitive receptors. The City of Manteca General Plan establishes allowable hours of operation and noise limits for construction activities as noted above.

**Table 19: Construction Equipment Noise**

Type of Equipment	Predicted Noise Levels, $L_{max}$ dBA				Distances to Noise Contours (feet)	
	Noise Level at 50'	Noise Level at 100'	Noise Level at 200'	Noise Level at 400'	70 dBA $L_{max}$ contour	65 dBA $L_{max}$ contour
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006.

All construction activities will be subject to the requirements of the City of Manteca Noise Ordinance with respect to limits on construction noise. Implementation of the proposed project would have a **less than significant** impact relative to this topic.

### Operational Noise at Existing Receptors

As noted above, to describe future noise levels due to traffic, the FHWA Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Inputs to the model included traffic volumes provided by Fehr & Peers. The FHWA model is based upon the Calven reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly  $L_{eq}$  values for free-flowing traffic conditions. To predict  $L_{dn}$ /CNEL values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

The CEQA Guidelines define a significant impact of a project if it "increases substantially the ambient noise levels for adjoining areas".

Implementation Measure N-I-3 of the City of Manteca General Plan Noise Element provides specific guidance for assessing increases in ambient noise, as follows:

*In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels are increased by 10 dB or more. An increase from 5-10 dB may be substantial. Factors to be considered in determining the significance of increases from 5-10 dB include:*

- the resulting noise levels
- the duration and frequency of the noise
- the number of people affected

- the land use designation of the affected receptor sites
- public reactions or controversy as demonstrated at workshops or hearings, or by correspondence
- prior CEQA determinations by other agencies specific to the project

Table 20 shows the existing versus existing plus project traffic noise levels, and Table 21 shows the cumulative versus cumulative plus project traffic noise levels. Based upon Tables 20 and 21, the related noise level increases due to the proposed project are predicted to be no more than one to two dBA along the local roadway network. This is less than the City's substantial increase criteria of 5 to 10 dB.

**Table 20: Existing Versus Existing Plus Project Traffic Noise Levels**

Roadway	Segment	Noise Levels (CNEL/L <sub>dn</sub> , dBA) @ 75 feet			Distance to Existing + Project Traffic Noise Contours, feet <sup>1</sup>		
		Existing	Existing + Project	Change	70 dBA L <sub>dn</sub>	65 dBA L <sub>dn</sub>	60 dBA L <sub>dn</sub>
Atherton Dr.	West of Lakeside Ave.	63 dB	65 dB	+2 dB	34	72	156
Atherton Dr.	West of Valencia Pl.	63 dB	64 dB	+1 dB	32	69	149
Atherton Dr.	East of Valencia Pl.	63 dB	64 dB	+1 dB	29	61	132
SR 120	At Project Site	80 dB	80 dB	0 dB	345	744	1,603

NOTES: <sup>1</sup> DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS. ACTUAL DISTANCES MAY VARY DUE TO SHIELDING FROM EXISTING NOISE BARRIERS OR INTERVENING STRUCTURES. TRAFFIC NOISE LEVELS MAY VARY DEPENDING ON ACTUAL SETBACK DISTANCES AND LOCALIZED SHIELDING.

SOURCES: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS AND J.C. BRENNAN & ASSOCIATES, INC. 2019.

**Table 21: Cumulative Versus Cumulative Plus Project Traffic Noise Levels**

Roadway	Segment	Noise Levels (CNEL/L <sub>dn</sub> , dBA) @ 75 feet			Distance to Existing + Project Traffic Noise Contours, feet <sup>1</sup>		
		Cumulative	Cumulative + Project	Change	70 dBA L <sub>dn</sub>	65 dBA L <sub>dn</sub>	60 dBA L <sub>dn</sub>
Atherton Dr.	West of Lakeside	66 dB	67 dB	+1 dB	44	95	206
Atherton Dr.	West of Valencia Pl.	66 dB	67 dB	+1 dB	44	95	205
Atherton Dr.	East of Valencia Pl.	65 dB	66 dB	+1 dB	39	85	183
SR 120	At Project Site	81 dB	81 dB	0 dB	411	886	1,908

NOTES: <sup>1</sup> DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS. ACTUAL DISTANCES MAY VARY DUE TO SHIELDING FROM EXISTING NOISE BARRIERS OR INTERVENING STRUCTURES. TRAFFIC NOISE LEVELS MAY VARY DEPENDING ON ACTUAL SETBACK DISTANCES AND LOCALIZED SHIELDING.

SOURCES: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS AND J.C. BRENNAN & ASSOCIATES, INC. 2019.

It is important to note that the predicted noise levels at the project site shown in Table 20 do not include shielding from existing buildings and residential areas.

The proposed project would not cause increased noise levels exceeding the City of Manteca exterior noise level standard at existing noise-sensitive residential receptors. Therefore, this impact would be considered **less than significant** relative to this topic.



## Operational Noise at Proposed Receptors

The proposed residents would be subject to traffic noise from area roadways in addition to commercial noise from the commercial development adjacent west of the project site. Each of these noise sources are discussed in detail below.

### Traffic Noise at Proposed Receptors - Exterior

Based upon Table 21, the cumulative noise levels due to SR 120 is 81 dB  $L_{dn}$ /CNEL at a distance of 75-feet from the roadway centerline. The cumulative noise levels due to Atherton Road is 67 dB  $L_{dn}$ /CNEL, at a distance of 75-feet from the roadway centerline. Table 22 shows the predicted traffic noise levels at the nearest residential facades, and at the proposed common outdoor areas (i.e., community centers and associated outdoor areas). The predicted future SR 120 traffic noise levels shown in Table 22 are applied at the Phase 1 portion of the project site. The predicted future Atherton Road traffic noise levels shown in Table 22 are applied at the Phase 2 portion of the project site.

**Table 22: Predicted Cumulative Traffic Noise Levels**

<b>Roadway</b>	<b>Noise Level at Nearest Building Facades</b>	<b>Noise Level At Community Centers</b>
SR 120	(@ 225-feet) 74 dB $L_{dn}$ /CNEL	(@ 535-feet)* 63 dB $L_{dn}$ /CNEL
Atherton Road	(@ 90-feet) 65 dB $L_{dn}$ /CNEL	(@ 345-feet)* 52 dB $L_{dn}$ /CNEL

NOTES: \* INCLUDES A 5 DB SHIELDING FROM INTERVENING BUILDING FACADES. ALL DISTANCES ARE FROM THE ROADWAY CENTERLINES.

SOURCES: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS AND J.C. BRENNAN & ASSOCIATES, INC. 2019.

Based upon Table 9-1 of the City of Manteca General Plan Noise Element (Table 17 of this section), the lower level noise level standard of 60 dB  $L_{dn}$ /CNEL for multi-family developments is applied at the common area where people generally congregate. The table also states the following:

*In areas where it is not possible to reduce exterior noise levels to 60 dB  $L_{dn}$  or below using a practical application of the best noise-reduction technology, an exterior noise level of up to 65 dB  $L_{dn}$  will be allowed.*

Based upon Table 22, the predicted future traffic noise associated with SR 120 will exceed the lower limit exterior noise level standard of 60 dB  $L_{dn}$ /CNEL. The future traffic noise associated with Atherton Road will comply with the lower limit exterior noise level standard of 60 dB  $L_{dn}$ /CNEL. Mitigation Measure NOI-1 requires construction of a noise barrier along the SR 120 right-of-way in order to reduce exterior noise levels. With implementation of this mitigation measure, impacts associated with exterior noise levels would be **less than significant**.

### Traffic Noise at Proposed Receptors - Interior

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB  $L_{dn}$ , or less, will typically comply with the City of Manteca 45 dB  $L_{dn}$  interior noise level standard. Additional noise reduction measures, such as acoustically rated windows, are generally required for exterior noise levels exceeding 70 dB  $L_{dn}$ . It should be noted that exterior noise levels are typically two to three

dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations.

The proposed project site is predicted to be exposed to mitigated first floor exterior SR 120 traffic noise levels which are less than 70 dB  $L_{dn}$ . However, the second floor facades will be exposed to SR 120 exterior noise levels of approximately 76 dB  $L_{dn}$ . Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at first floor facades will comply with the interior noise level standard of 45 dB  $L_{dn}$ . The second floor facades are predicted to be exposed to SR 120 traffic noise levels of up to 51 dB  $L_{dn}$ . These noise levels would exceed the City of Manteca 45 dB  $L_{dn}$  interior noise level standard for residential uses. In order to achieve compliance with the 45 dB  $L_{dn}$  interior noise level standard, interior noise control measures would be required. This would include the use of sound transmission class (STC) 38 rated window assemblies in second floor facades parallel and perpendicular to SR 120, located within 450-feet of the centerline of SR 120.

Mitigation Measure NOI-2 would minimize noise impacts resulting from transportation noise impacts on the proposed project site by requiring STC 38 rated window assemblies on second floor facades parallel and perpendicular to SR 120, located within 450-feet of the centerline of SR 120. Implementation of this mitigation measure would ensure consistency with the City's noise standards and would reduce this potentially significant impact to a ***less than significant*** level.

#### Commercial Noise at Proposed Receptors - Interior

Based upon Table 16, the noise levels on the project site are dominated by traffic on SR 120 and Atherton Road. The commercial center to the west does contain noise sources which contribute to the audible noise on the project site. Once a sound wall is installed along the SR 120 ROW (as required by Mitigation Measure NOI-1), the noise from the commercial center may become more noticeable.

Based upon the distance from the project site to the loading dock of the Bass Pro Shop, the noise levels associated with the loading dock are not expected to exceed existing background noise levels or the City standards. Therefore, impacts associated with interior noise levels would be ***less than significant***.

#### *Mitigation Measure(s)*

***Mitigation Measure NOI-1:*** A sound barrier with a minimum height of 10-feet shall be constructed along the SR 120 right-of-way adjacent to the project site, which is consistent with barrier heights for other projects in the area. A barrier analysis (Appendix A of the noise analysis) indicates that a sound barrier located at the SR 120 right-of-way would provide the following shielding of SR 120 traffic noise levels at the first row of building facades, and the common area of Phase 1:

Barrier Height	Resulting SR 120 Traffic Noise Level	
	@ First Row of Facades	@ Common Area
6-feet	68 dB $L_{dn}$ /CNEL	58 dB $L_{dn}$ /CNEL
7-feet	68 dB $L_{dn}$ /CNEL	57 dB $L_{dn}$ /CNEL
8-feet	68 dB $L_{dn}$ /CNEL	57 dB $L_{dn}$ /CNEL
9-feet	67 dB $L_{dn}$ /CNEL	57 dB $L_{dn}$ /CNEL
10-feet	67 dB $L_{dn}$ /CNEL	57 dB $L_{dn}$ /CNEL
11-feet	66 dB $L_{dn}$ /CNEL	56 dB $L_{dn}$ /CNEL
12-feet	65 dB $L_{dn}$ /CNEL	55 dB $L_{dn}$ /CNEL
SOURCE: J.C. BRENNAN & ASSOCIATES, 2019.		

*The sound barrier shall be constructed when Phase 2 of the project is constructed. The sound barrier shall be noted on the project's improvement plans.*

**Mitigation Measure NOI-2:** *All parallel and perpendicular second floor building facades located within 450 feet of the centerline of SR 120 shall have a minimum sound transmission class (STC) rating of 38. In addition, these facades shall have a minimum of a three-coat stucco exterior, and interior gypsum board installed over resilient channels. As an alternative to this requirement, the applicant may submit a detailed interior noise analysis outlining alternative noise control measures that would ensure compliance with the City of Manteca 45 dB L<sub>dn</sub> interior noise level standard. This analysis shall specify required sound ratings for glazing as well as any other modifications to be the building envelope used to meet the City's interior noise level standard. This analysis shall be prepared by a qualified acoustical consultant. These requirements shall be noted on the project's improvement plans.*

**Response b):** Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by several factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 23 indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum threshold or 0.1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utilities placement, and roadway construction occur. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located approximately 25 to 50 feet or further from the project site. At this distance, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

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. Table 24 shows the typical vibration levels produced by construction equipment.

**Table 23: Effects of Vibration on People and Buildings**

<b>Peak Particle Velocity</b>		<b>Human Reaction</b>	<b>Effect on Buildings</b>
<b>mm/sec.</b>	<b>in./sec.</b>		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of “architectural” damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of “architectural” damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize “architectural” damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBOEN VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

**Table 24: Vibration Levels for Varying Construction Equipment**

<b>Type of Equipment</b>	<b>Peak Particle Velocity @ 25 feet (inches/second)</b>	<b>Peak Particle Velocity @ 100 feet (inches/second)</b>
Large Bulldozer	0.089	0.011
Loaded Trucks	0.076	0.010
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.011
Jackhammer	0.035	0.004
Vibratory Hammer	0.070	0.009
Vibratory Compactor/roller	0.210	0.026

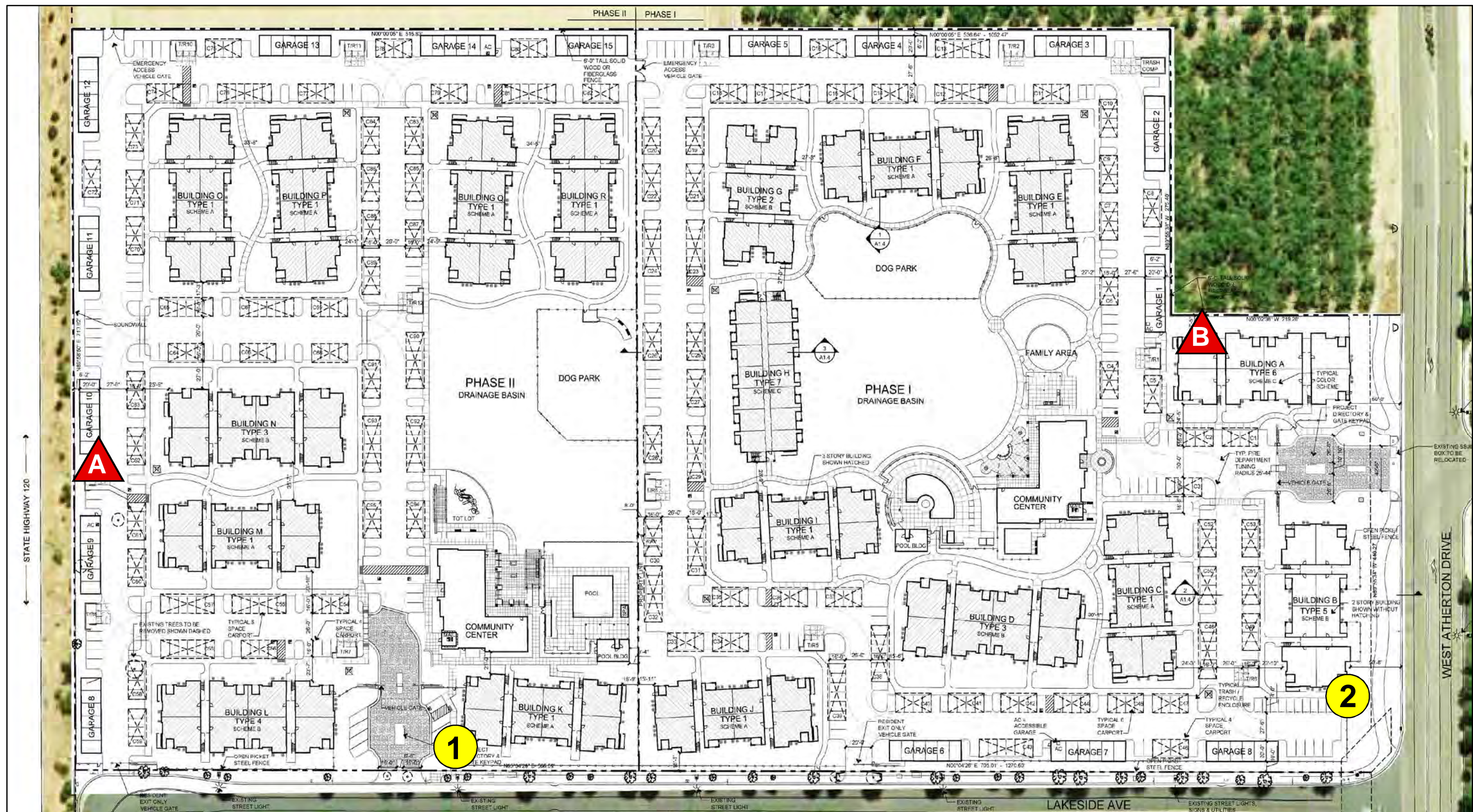
SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

The Table 24 data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec p.p.v. threshold of damage to buildings and less than the 0.1 in/sec threshold of annoyance criteria at distances over 25 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the proposed project would have a **less than significant** impact relative to this environmental topic.



**Response c):** The project site is not located within the vicinity of 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. The closest airport or airstrip is the Stockton Metropolitan Airport, located approximately 7.1

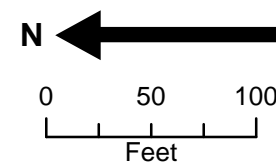
miles north of the project site. The proposed project would, therefore, not expose people residing or working in the project area to excessive noise levels associated with such airport facilities. The project site is not located within the vicinity of a private airstrip. The proposed project would, therefore, not expose people residing or working in the project area to excessive noise levels associated with such private airport facilities. Implementation of the proposed project would have ***no impact*** relative to this topic.





**Legend**

-  24-hour Noise Monitoring Site
-  Short-term Noise Monitoring Site



CITY OF MANTECA - VALENCIA APARTMENTS

Figure 12. Noise Monitoring Locations



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*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

*Responses to Checklist Questions*

**Response a):** According to the 2017 US Census population estimates, the population in Manteca is 79,268 people, and the average persons per household is 3.18. The proposed project would result in the construction of residential housing that would generate an estimated 1,361 people. This is an estimated 1.7 percent growth in Manteca. An estimated 1.7 percent growth in Manteca is not considered substantial growth in Manteca or the region and it is consistent with the assumed growth in the General Plan. The 1,361 people may come from Manteca 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 multi-family complex. The sizing of the infrastructure would be specific to the number of units proposed 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.

**Response b):** The project site is currently undeveloped and does not contain housing. 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

**Responses to Checklist Questions****Response a):****Fire Protection**

The project site is currently under the jurisdiction of the Manteca Fire Department. The Manteca Fire Department serves approximately 71,164 residents throughout approximately 17.2 square miles within the City limits. The Manteca Fire Department operates out of four (4) facilities that are strategically located in the City of Manteca. The nearest fire station to the project site is located at 1154 Union Road, approximately 0.55 miles northwest of the project site.

The Manteca Fire Department maintains a goal for the initial company of three (3) firefighters to arrive on scene for fire and emergency medical service (EMS) incidents within five (5) minutes 90% of the time (Response Effectiveness). In 2014, the Department averaged a 4:18 response time City-wide and was on scene within five minutes 77% of the time. In 2015, the Department averaged a 4:40 response time City-wide. Additionally, in 2015, 6,615 calls were made to the Department, which is the greatest number of calls in the history of the Manteca Fire Department.<sup>4</sup>

The Department is not currently meeting the Response Effectiveness goal. In May of 2016, the Department arrived on-scene within 5 minutes approximately 66% of the time.<sup>5</sup> The percentage continues to decline. The Department has recently seen increased calls and expanded areas of coverage. The proposed project will be served by the Department's most impacted fire station (Station No. 2, 1154 S. Union Rd). To combat the increased calls in the southern areas of Manteca, the Department has recently staffed a "Rescue" in District 2. The additional unit will help relieve the significant call volume in south Manteca.

On September 11, 2013, Fire Station No. 4 opened in northwest Manteca. Fire Station No. 4 was one factor that helped to improve both the average response time and the percent of response effectiveness in 2014.

<sup>4</sup> City of Manteca Fire Department. 2015. City of Manteca Fire Department 2015 Annual Report.

<sup>5</sup> Personal Communication with Lantz Rey, City of Manteca Fire Department Fire Marshal. July 19, 2016.

The construction of Fire Station No. 5, which is planned in southeast Manteca, will have a similar impact on response times and response effectiveness. The City is in the process of completing 30 percent of the design of this station with the intent of constructing and staffing this station by the 2019/2020 fiscal year. Funding for this station is dependent on additional annexations and development in the area. The construction and staffing of Fire Station No. 5 will allow the City the ability to achieve the full alarm standard outlined by the National Fire Protection Association 1710 for the first time in the City's History; this will directly affect the Insurance Services Office (ISO) rating, enhance service to the citizens of Manteca, and improve the department's ability to obtain grants.

The proposed project would add 428 residential units, which is anticipated to add 1,361 people to the City of Manteca. The additional of 1,361 people in the City of Manteca would place additional demands for police service on the Manteca Fire Department.

The City of Manteca receives funds for the provision of public services through development fees, property taxes, and connection and usage fees. As land is developed within the City and annexed into the City of Manteca, these fees apply. The City of Manteca reviews these fee structures on an annual basis to ensure that they provide adequate financing to cover the provision of city services. The City's Community Development, Public Works, and Finance Departments are responsible for continual oversight to ensure that the fee structures are adequate. The City reviews the referenced fees and user charges on an annual basis to determine the correct level of adjustment required to reverse any deficits and assure funding for needed infrastructure going forward. The City intends to include discussion of these fees and charges as part of the annual budget hearings.

The City of Manteca General Plan 2023 includes policies and implementation measures that would allow for the Department to continue providing adequate facilities and staffing levels. Below is a list of relevant policies:

- The City shall endeavor to maintain an overall fire insurance (ISO) rating of 4 or better (Policy PF-P-42).
- The City shall endeavor through adequate staffing and station locations to maintain the minimum feasible response time for fire and emergency calls (PF-P-43).
- The City shall provide fire services to serve the existing and projected population (PF-P-44).
- The City will establish the criteria for determining the circumstances under which fire service will be enhanced (PF-P-45).
- The Fire Department shall continuously monitor response times and report annually on the results of the monitoring (PF-I-24).
- The City shall encourage a pattern of development that promotes the efficient and timely development of public services and facilities (LU-P-3).

Impact fees from new development are collected based upon projected impacts from each development. The adequacy of impact fees is reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of the applicable impact fees by the project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the proposed project, would fund capital and labor costs associated with fire protection services. Therefore, the impact of the proposed project on the need for additional fire services facilities is ***less than significant***.

## Police Protection

The project site is currently under the jurisdiction of the Manteca Police Department. The Manteca Police Department operates out of its headquarters located at 1001 W. Center Street. The project site is located approximately 1.23 miles southeast of the headquarters.

The Manteca Police Department is organized into two divisions: Operations and Services. Additionally, the Police Department operates a Public Affairs Unit. For budgeting purposes, the Police Department is organized into the following programs: administration, patrol, investigations, support services, dispatch, code enforcement, jail services, and animal services.

The proposed project would add 428 residential units, which is anticipated to add 1,361 people to the City of Manteca. The additional of 1,361 people in the City of Manteca would place additional demands for police service on the Manteca Police Department.

The City of Manteca receives funds for the provision of public services through development fees, property taxes, and connection and usage fees. As land is developed within the City and annexed into the City of Manteca, these fees apply. The City of Manteca reviews these fee structures on an annual basis to ensure that they provide adequate financing to cover the provision of city services. The City's Community Development, Public Works, and Finance Departments are responsible for continual oversight to ensure that the fee structures are adequate. The City reviews the referenced fees and user charges on an annual basis to determine the correct level of adjustment required to reverse any deficits and assure funding for needed infrastructure going forward. The City intends to include discussion of these fees and charges as part of the annual budget hearings.

The City's General Plan includes policies and implementation measures that would allow for the Manteca Police Department to continue providing adequate staffing levels. Below is a list of relevant policies:

- The City shall endeavor through adequate staffing and patrol arrangements to maintain the minimum feasible police response times for police calls. Currently the City has 63 sworn officers. With a population of 71,164, that equates to a staffing level of .85 officers per 1000 residents.
- The City shall provide police services to serve the existing and projected population. The Police Department will continuously monitor response times and report annually on the results of the monitoring.

Impact fees from new development are collected based upon projected impacts from each development. The adequacy of impact fees is reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the proposed Project, would fund capital and labor costs associated with police services.

Based on the current adequacy of existing response times and the ability of the Manteca Police Department to serve the City, it is anticipated that the existing police department facilities are sufficient to serve the proposed Project. Consequently, any impacts would be ***less than significant***.



## Schools

Most schools within the City of Manteca are part of the Manteca Unified School District (MUSD). The MUSD provides school services for grades kindergarten through 12 (K-12) within the communities of Manteca, Manteca, Stockton, and French Camp. The District is approximately 113 square miles and serves more than 23,000 students. Within the City of Manteca, there are three elementary schools (Manteca Elementary School, Joseph Widmer School, and Mossdale Elementary School) and one high school (Manteca High School). River Islands has two charter elementary schools, located within the Banta Unified School District (River Islands Technology Academy and the S.T.E.A.M. Academy).

MUSD provides school services for grades K through 12 within the communities of Manteca, Lathrop, Stockton, and French Camp. MUSD operates 14 elementary and middle schools (grades K-8), four high schools (grades 9-12), one community day school (grades 7-12), and one vocational academy (grades 11-12). The schools in the City had a total enrollment of approximately 14,279 students, of which 9,416 were enrolled in elementary and middle school (grades K – 8) and 4,863 were enrolled in high school (grades 9 – 12).

The proposed project includes residential units that would directly increase the student population in the area. The proposed project would include the development of 428 dwelling units, which would directly cause population growth and increase enrollment in the local school districts. Utilizing the student generation rates provided by the MUSD in the NOP comment letter for the Oakwood Landing – Cerri & Denali Subdivisions Project (dated September 12, 2016), the proposed project would be expected to generate roughly 303 new students, broken down by grades as follows:

- K-8: 205 students
- 9-12: 98 students

The MUSD collects impact fees from new developments under the provisions of SB 50. Payment of the applicable impact fees by the project applicant, and ongoing revenues that would come from taxes, would fund capital and labor costs associated with school services. The adequacy of fees is reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of the applicable impact fees by the project applicant, and ongoing revenues that would come from property taxes and other revenues generated by the proposed project, would fund improvements associated with school services.

The provisions of State law are considered full and complete mitigation for the purposes of analysis under CEQA for school construction needed to serve new development. In fact, State law expressly precludes the City from reaching a conclusion under CEQA that payment of the Leroy F. Greene School Facilities Act school impact fees would not completely mitigate new development impacts on school facilities. Consequently, the City of Manteca is without the legal authority under CEQA to impose any fee, condition, or other exaction on the project for the funding of new school construction other than the fees allowed by the Leroy F. Greene School Facilities Act. Although MUSD may collect higher fees than those imposed by the Leroy F. Greene School Facilities Act, no such fees are required to mitigate the impact under CEQA. Because the project would pay fees as required by The Leroy F. Greene School Facilities Act, this impact would be ***less than significant***.

## Parks

The proposed project directly increases the number of persons in the area as a result of employment potential, and residential uses. The proposed project includes 428 residential units, which is projected to increase the population by an estimated 1,361 people (based on 3.18 persons per household). For the purposes of extractive and collecting fees to mitigate for increase park demands (Quimby Act), the California Government Code Section 66477 states: *The amount of land dedicated or fees paid shall be based upon the residential density, which shall be determined on the basis of the approved or conditionally approved tentative map or parcel map and the average number of persons per household. There shall be a rebuttable presumption that the average number of persons per household by units in a structure is the same as that disclosed by the most recent available federal census or a census taken pursuant to Chapter 17 (commencing with Section 40200) of Part 2 of Division 3 of Title 4.*

The City's General Plan identifies a park standard based on a goal of five acres of developed parkland per 1,000 residents within the city limits. Further, the City's Parks and Recreation Master Plan (December 2016) states that the City currently strives to provide 3.5 acres of Neighborhood Park land per thousand residents, and 1.5 acres of Community Park land. Due to the active sports needs of the community, the recommendation of the City's Master Plan is to shift the acreage goals to achieve a better balance of park land in the future, resulting in a new goal for developing adequate Special Use Park land. The total goal of 5 acres per 1,000 residents remains intact, and the summary of the goals is broken down below:

- Neighborhood Park: 3 acres / 1,000 residents
- Community Park: 1 acre / 1,000 residents
- Special Use Park: 1 acre / 1,000 residents

According to the Master Plan, the City currently has a deficit of 5.67 acres of Neighborhood Park, and a surplus of Community Parks (5.58 acres) and Special Use Parks (18.06 acres). Using the above parkland goals, the proposed project would be required to provide:

- Neighborhood Park: 4.083 acres
- Community Park: 1.361 acres
- Special Use Park: 1.361 acres

The proposed amenities include two community centers, two pools, two associated pool buildings, two family areas/tot lots, and two dog parks. These facilities are intended to serve the residents of the apartment complex and not the city as a whole. The project does not include any Neighborhood Parks, Community Parks, or Special Use Parks. As such, the proposed project is subject to the City park dedication in-lieu fees. The payment of the City park dedication in-lieu fees would serve as an adequate offset for the park demand. As such, with the implementation of Mitigation Measure PUBLIC-1, the proposed project will result in a ***less-than-significant*** impact.

### *Mitigation Measure(s)*

**Mitigation Measure PUBLIC-1:** *The applicant shall pay applicable park in-lieu fees or dedicate parkland in accordance with the City of Manteca Municipal Code standards outlined in Chapter 3.20. Proof of payment of the in-lieu fees shall be submitted to the City Engineer.*

**Other Public Facilities**

The proposed project would not result in a need for other public facilities that are not addressed above, or in Section XVIII, Utilities and Service Systems. 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

*Responses to Checklist Questions*

**Responses a):** The project would result in the construction of 428 multi-family residential homes. The proposed project would result in an estimated 1,361 individuals. The estimated new demand for parks is 6.805 acres (including 4.083 acres of Neighborhood Park, 1.361 acres of Community Park, and 1.361 acres of Special-Use Park). The proposed amenities include two community centers, two pools, two associated pool buildings, two family areas/tot lots, and two dog parks. These facilities are intended to serve the residents of the apartment complex and not the city as a whole. The project does not include the construction of new parks; therefore, the developer would be required to pay in-lieu fees. The in-lieu fees would ultimately fund the construction of new park land to offset the increased demand for these facilities. With implementation of Mitigation Measure PUBLIC-1, this potential impact would be reduced to a ***less-than-significant*** level.

**Responses b):** The proposed project does not include the construction of public 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 ***no 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	

### *Background*

The *Transportation Impact Analysis Report* (February 2019) was prepared by Fehr & Peers for the proposed project under contract to De Novo Planning Group. The following is a summary of the report, which is contained in Appendix C.

### **Study Intersections**

The following four study intersections have been included in the analysis:

1. Union Road / Atherton Drive (signalized);
2. Main Street / Atherton Drive (signalized);
3. Lakeside Avenue / Atherton Drive (side street stop controlled); and
4. Tinnin Road / Valencia Place / Atherton Drive (side street stop controlled).

### **Traffic Analysis Scenarios**

The study intersections were evaluated for the following four scenarios:

- **Scenario 1: Existing Conditions** –LOS based on Existing Year 2019 AM and PM peak hour volumes and existing intersection configurations.
- **Scenario 2: Existing Plus Project Conditions** – Existing traffic volumes plus trips from the proposed project.
- **Scenario 3: Cumulative Conditions** – This scenario includes cumulative volumes based on the City of Manteca / SJCOG Travel Demand Forecasting (TDF) Model.
- **Scenario 4: Cumulative Plus Project Conditions** – This scenario includes cumulative volumes plus the trips from the proposed project

### **Existing Roadway Network**

The following is a detailed description of the roadways that could be affected by the project:

- **Atherton Drive** is an east-west collector in the City of Manteca providing access from Airport Way to the west and Main Street to Woodward Avenue to the east. The existing three-legged intersection of Union Road / Atherton Drive will be improved to extend Atherton Drive to the west. With this planned improvement, Atherton Drive will provide



a continuous east-west collector from McKinley Avenue to the west and Woodward Avenue to the east. In the vicinity of the project site, Atherton Drive provides two travel lanes in each direction with an AM peak hour volume of approximately 220 vehicles, a PM peak hour volume of 515 vehicles and an Average Daily Traffic volume of 5,300 vehicles.

- **Union Road** is a north-south arterial in the City of Manteca providing access from W. Ripon Road to the south and SR 120 to French Camp Road to the north. In the vicinity of the project site, Union Road provides one travel lane in each direction. North of Atherton Drive, Union Road serves an AM peak hour volume of approximately 900 vehicles, a PM peak hour volume of 1,200 vehicles and an Average Daily Traffic volume of 15,000 vehicles. South of Atherton Drive, Union Road serves an AM peak hour volume of approximately 500 vehicles, a PM peak hour volume of 600 vehicles and an Average Daily Traffic volume of 7,900 vehicles.
- **Main Street** is a north-south arterial in the City of Manteca providing access from W. Ripon Road to the south and Lathrop Road to the north. In the vicinity of the project site, Union Road provides one travel lane in each direction. North of Atherton Drive, Main Street serves an AM peak hour volume of approximately 900 vehicles, a PM peak hour volume of 1,200 vehicles and an Average Daily Traffic volume of 15,000 vehicles. South of Atherton Drive, Main Street serves an AM peak hour volume of approximately 650 vehicles, a PM peak hour volume of 860 vehicles and an Average Daily Traffic volume of 10,900 vehicles.

### Intersection Analysis Methodology

The Synchro/SimTraffic microsimulation software package (Version 10) was used to analyze the currently unsignalized intersections and potential future signalized study intersections. This analysis software program is consistent with the technical approach documented in the *Highway Capacity Manual – 6<sup>th</sup> Edition* for calculating delay at both unsignalized and signalized intersections. It considers roadway design, intersection geometries, turn pocket storage lengths, and intersection control on intersection queuing and delays. Therefore, intersection delay/LOS results documented in the Transportation Impact Analysis Report are based on the SimTraffic results.

The following describes the specific inputs, model parameters, and other aspects of the SimTraffic modeling:

#### Existing/Planned Lane Configurations:

- The existing and planned roadway geometrics and intersection lane configurations were entered into the SimTraffic Version 10 traffic operations analysis model based on Existing 2018 field data.

#### Peak Hour Factors:

- The peak hour factor (PHF) observed in the field was determined to range from 0.92 to 0.95 during AM and PM peak hour conditions.
- It should be noted that a lower PHF of 0.92 (versus the field data collected 0.92 to 0.95 PHF) was used for the study intersections under Existing Year 2018 and Cumulative Year 2042 AM and PM peak hour conditions. This will provide an additional level of confidence (i.e., conservative) in the traffic analysis contained in this report.

These methodologies were applied using Synchro 10 to analyze all study intersections. The following describes many of the specific inputs into Synchro 10:

- Lane Configurations and Pocket Lengths: The configurations and lengths were entered into Synchro based on field work and aerial imagery measurements;
- Heavy Vehicle %:
  - The HCM definition (any vehicles with more than four wheels on the ground) was used to input heavy vehicles into SimTraffic 10 software program.
  - Based on field collected traffic and vehicle classification counts, a two percent (2%) factor was used in the Synchro / SimTraffic 10 analysis consisting of 80% single-unit (45 feet) and 20% California Legal (69 feet).
- Pedestrians and Bicyclists: The observed levels were entered into Synchro 10. When none available, a conservative standard of five pedestrians was used to account for pedestrian activity variability.
  - Observed levels were observed to range from one to four pedestrians during weekday AM and PM peak hour conditions at the study intersections for Existing Conditions.
  - For Cumulative Year 2042 AM and PM peak hour conditions, increased pedestrian activity was included for both No Project (three to five) and With Project (five to ten) AM and PM peak hour conditions.

### Reported Results

A signalized intersection's LOS is based on the weighted average control delay of all vehicles passing through the intersection. Delay is measured in seconds per vehicle, and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration.

For side-street control intersections, the delay and LOS is reported for the entire intersection and the minor street movement with the greatest delay.

The average delay and LOS are reported for both the critical movement and the entire intersection for unsignalized intersections. The average delay and LOS are reported the entire intersection for signalized intersections.

### LOS Criteria and Standard

A signalized intersection's LOS is based on the weighted average control delay of all vehicles passing through the intersection. Delay is measured in seconds per vehicle, and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. For side-street control intersections, the delay and LOS is reported for the entire intersection and the minor street movement with the greatest delay. Table 25 summarizes the relationship between the delay and LOS for signalized and unsignalized intersections.

**Table 25: LOS Criteria – Intersections**

LOS	Description (for Signalized Intersections)	Average Delay (Seconds/Vehicle)	
		Signalized Intersections	Unsignalized Intersections
A	Operations with very low delay occurring with favorable traffic signal progression and/or short cycle lengths.	< 10.0	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0	> 10.0 to 15.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0	> 15.0 to 25.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0	> 25.0 to 35.0
E	Operations with high delay values indicating poor progression, and long cycle lengths. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to 80.0	> 35.0 to 50.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0	> 50.0

NOTE: LOS = LEVEL OF SERVICE; V/C RATIO= VOLUME-TO-CAPACITY RATIO. LOS AT SIGNALIZED INTERSECTIONS AND ROUNDABOUTS BASED ON AVERAGE DELAY FOR ALL VEHICLES. LOS AT UNSIGNALIZED INTERSECTIONS IS REPORTED FOR ENTIRE INTERSECTION AND FOR MINOR STREET MOVEMENT WITH GREATEST DELAY.

SOURCE: TRANSPORTATION RESEARCH BOARD 2016.

Manteca General Plan Policy C-P-2 establishes the following City of Manteca LOS policy: To the extent feasible, the City shall strive for a vehicular LOS of D or better at all streets and intersections, except in the Downtown area where right-of-way is limited, pedestrian, bicycle, and transit mobility are most important and vehicular LOS is not a consideration.

### Travel Demand Forecasts

This section describes the process used to develop traffic demand forecasts for Cumulative Year 2042 AM and PM peak hour conditions.

The Travel Demand Forecasting used the current SJCOG Regional Transportation Plan (RTP) / Air Quality Model, build-out of the current City of Manteca General Plan, and General Plans for the surrounding communities of Lathrop, Ripon, San Joaquin County, and Stockton. The Manteca General Plan Model also included the projects identified in the City's Public Facilities Improvement Plan (PFIP) and the RTP / Sustainable Communities Strategy Project List for:

- Mainline Highway Improvements (Table 6-1 from SJCOG RTP);
- Interchange Improvements (Table 6-1 from SJCOG RTP); and
- Regional Roadway Improvements (Table 6-3 from SJCOG RTP).

Using the City of Manteca / SJCOG sub-area TDF Model, Cumulative Year 2042 traffic volume forecasts were developed for the following four study intersections:

1. Union Road / Atherton Drive (signalized);
2. Main Street / Atherton Drive (signalized);
3. Lakeside Avenue / Atherton Drive (side street stop controlled); and
4. Tinnin Road / Valencia Place / Atherton Drive (side street stop controlled).

The traffic forecasting adjustment procedure known as the “difference method” was used to develop Cumulative Year 2042 AM And PM Peak Hour traffic forecasts. For a given intersection, this forecasting procedure is calculated as follows for every movement at the study intersections:

$$\text{Year 2042 Forecast} = \text{Existing Volume} + (\text{Year 2042 TDF Model} - \text{Base Year (2018) TDF Model})$$

### Existing Intersection Levels of Service

Existing traffic operations were analyzed at the four existing study intersections for the two study hours. Based on the results presented in Table 26 for Existing AM and PM peak hour analysis, the two signalized intersections operate at acceptable LOS B conditions during the AM peak hour. During the PM peak hour the Union Road / Atherton Drive signalized intersection operates at acceptable LOS B conditions and the Main Street / Atherton Drive signalized intersection operates at acceptable LOS C conditions.

**Table 26: Peak Hour Intersection LOS – Existing Conditions**

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
Union Rd. / Atherton Dr.	Signal	18.4	B	23.0	C
Main St. / Atherton Dr.	Signal	16.4	B	19.1	B
Lakeside Ave. / Atherton Dr.	SSSC	0.7 8.8 (SB RT)	A (entire) A (SB RT)	0.1 9.1 (SB RT)	A (entire) A (SB RT)
Tinnin Rd. / Atherton Dr.	SSSC	2.0 9.9 (NB LT)	A (entire) A (NB LT)	0.7 12.3 (NB LT)	A (entire) B (NB LT)

NOTES: LOS = LEVEL OF SERVICE. SSSC = SIDE-STREET STOP CONTROL. NB LT = NORTH-BOUND LEFT-TURN. SB LT = SOUTH-BOUND LEFT-TURN.

<sup>1</sup> FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES.

SOURCE: FEHR & PEERS, 2019.

The unsignalized side street stop controlled intersection of Lakeside Drive / Atherton Drive operates at acceptable LOS A conditions during both AM and PM peak hours. The unsignalized side street stop controlled intersection of Tinnin Road / Atherton Drive operates at acceptable LOS A conditions during the AM peak hour and acceptable LOS B during the PM peak hour.

### Transit Service

Transit service in the City of Manteca is provided by Manteca Transit. Transit Route 2 (westbound) and Transit Route 3 (eastbound) provide fixed route service in the vicinity of the proposed project. The closest transit stops for Routes 2 and 3 are located directly west of the proposed project site on Atherton Drive, which is less than 300 feet west of the project site.

### Bicycle and Pedestrian Facilities

The following types of bicycle facilities exist within the study area:

- Multi-use paths (Class I) are paved trails that are separated from roadways, and allow for shared use by both cyclists and pedestrians.
- On-street bike lanes (Class II) are designated for use by bicycles by striping, pavement legends, and signs.

Unfortunately, there are no existing bicycle lanes in the vicinity of the project site. The closest existing Class II bike lanes are located south and east of the project site on Woodward Avenue on Buena Vista Drive and Tannehill Drive. In addition, a Class II bike lane is also provided on the north side of SR 120 on Mission Ridge Drive between Union Road and Main Street.

The pedestrian network in the study area includes sidewalks along the north side of Atherton Drive west of Lakeside Avenue to Union Road. In addition, sidewalks are provided along the south side of Atherton Drive from Union Road to the west and Main Street to the east.

As part of the proposed project, sidewalks would be constructed on the north side of Atherton Drive along the project site, a distance of approximately 400 feet. The remainder of the north side of Atherton Drive would not provide sidewalks until future development occurs east of the project site to Main Street.

### *Responses to Checklist Questions*

#### **Responses a-b):**

#### **Project Trip Generation**

Table 27 presents the estimated trips generated for the proposed project during weekday daily, AM peak hour, and PM peak hour conditions. As shown below, the project would generate approximately 3,134 daily vehicle trips, 197 AM peak hour trips, and 240 PM peak hour trips. The trips generated by the residential land uses are based on trip rates from the *Trip Generation Manual* (9<sup>th</sup> Edition, Institute of Transportation Engineers 2017).

**Table 27: Project Trip Generation**

Land Use (ITE Code)	Size	Trip Rate <sup>1</sup>			Trips						
					Daily	AM Peak Hour			PM Peak Hour		
		Daily	AM	PM		In	Out	Total	In	Out	Total
Apartments	428 DU	7.32	0.46	0.56	3,134	39	158	197	156	84	240
<b>Total External Vehicle Trips</b>					<b>3,134</b>	<b>39</b>	<b>158</b>	<b>197</b>	<b>156</b>	<b>84</b>	<b>240</b>

NOTES: DU = DWELLING UNITS

<sup>1</sup> TRIP RATE FOR SINGLE FAMILY RESIDENTIAL UNITS BASED ON LU CATEGORIES 220 FROM THE TRIP GENERATION MANUAL (INSTITUTE OF TRANSPORTATION ENGINEERS 2017).

SOURCE: FEHR & PEERS, 2019.

#### **Project Trip Distribution**

The distribution of project generated vehicles trips was based on the following information and analysis methods:

1. Existing directional travel patterns on Atherton Drive, Union Road and Main Street during morning and evening commute time periods; and



2. Complementary land uses (i.e., employment, retail, and schools) within the City of Manteca and surrounding cities.

### Existing Plus Project Intersection Levels of Service

The “project only” trips developed through the trip generation and distribution processes were assigned to the roadway network by adding those new trips to existing traffic volumes. Table 28 displays the results of the Existing Plus Project operations analysis.

**Table 28: Peak Hour Intersection LOS – Existing Plus Project Conditions**

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
Union Rd. / Atherton Dr.	Signal	22.3	C	27.3	C
Main St. / Atherton Dr.	Signal	17.3	B	19.5	B
Lakeside Ave. / Atherton Dr.	SSSC	1.9 9.3 (SB RT)	A (entire) A (SB RT)	0.5 9.5 (SB RT)	A (entire) A (SB RT)
Tinnin Rd. / Valencia Pl. / Atherton Dr.	SSSC	4.2 10.5 (SB LT) 10.8 (NB LT)	A (entire) A (SB LT) A (NB LT)	2.6 17.4 (SB LT) 16.8 (NB LT)	A (entire) C (SB LT) C (NB LT)

NOTES: LOS = LEVEL OF SERVICE. SSSC = SIDE-STREET STOP CONTROL. NB LT = NORTH-BOUND LEFT-TURN. SB LT = SOUTH-BOUND LEFT-TURN.

<sup>1</sup> FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES.

SOURCE: FEHR & PEERS, 2019.

According to this table, the addition of project generated traffic to the four study intersections will only result in minor changes to intersection LOS.

During both morning and evening peak hours, the Union Road / Atherton Drive signalized intersection will continue to operate at acceptable LOS C conditions.

During both morning and evening peak hours, the Main Street / Atherton Drive signalized intersection will continue to operate at acceptable LOS B conditions.

At the Lakeside Avenue / Atherton Drive side street stop controlled intersection, the southbound right-turn movement will continue to operate at acceptable LOS A conditions during both morning and evening peak hours.

At the Tinnin Road / Valencia Place / Atherton Drive street stop controlled intersection, the southbound left-turn movement will operate at acceptable LOS A during the AM peak hour and acceptable LOS C during the PM peak hour. The northbound left-turn movement will also operate at acceptable LOS A during the AM peak hour and acceptable LOS C during the PM peak hour.

### Cumulative No Project Intersection LOS

Table 29 presents the results of the Cumulative No Project operations analyses. According to this table, Union Road and Main Street will result in increased cycle lengths and delays to serve projected AM and PM peak hour conditions.

**Table 29: Peak Hour Intersection LOS – Cumulative No Project Conditions**

Intersection	Control	Cumulative No Project Conditions			
		AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
Union Road / Atherton Drive	Signal	25.4	C	36.4	D
Main Street / Atherton Drive	Signal	28.7	C	30.4	C
Lakeside Avenue / Atherton Drive	SSSC	0.5 9.2 (SB RT)	A (entire) A (SB RT)	0.3 9.7 (SB RT)	A (entire) A (SB RT)
Tinnin Road / Valencia Place / Atherton Drive	SSSC	1.6 11.8 (NB LT)	A (entire) B (NB LT)	1.0 17.2 (NB LT)	A (entire) C (NB LT)

NOTES: LOS = LEVEL OF SERVICE. SSSC = SIDE-STREET STOP CONTROL. NB LT = NORTH-BOUND LEFT-TURN. SB LT = SOUTH-BOUND LEFT-TURN. **BOLDED** CELLS REPRESENT SIGNIFICANT IMPACTS.

<sup>1</sup> FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES.

SOURCE: FEHR & PEERS, 2019.

The combination of higher traffic volumes and the extension of Atherton Drive west of Union Road results in the Union Road / Atherton Drive intersection operating at acceptable LOS C during the AM peak hour and acceptable LOS D during the PM peak hour. The Main Street / Atherton Drive intersection is projected to operate at acceptable LOS C during both AM and PM peak hours.

The unsignalized side street stop controlled intersection of Lakeside Drive / Atherton Drive will continue to operate at acceptable LOS A conditions during both AM and PM peak hours.

The unsignalized side street stop controlled intersection of Tinnin Road / Atherton Drive is projected to operate at acceptable LOS B conditions during the AM peak hour and acceptable LOS C during the PM peak hour.

The signal warrant analysis for Cumulative No Project conditions indicate that the intersection of Tinnin Road / Atherton Drive does not meet peak hour signal warrants for either AM or PM peak hour conditions as a result of increased traffic volumes on eastbound / westbound Atherton Drive. This is consistent with the fact that the City of Manteca did not identify the need for a traffic signal at the Tinnin Road / Atherton Drive intersection in the PFIP.

### Cumulative Plus Project Intersection LOS

Table 30 presents the results of the Cumulative Plus Project operations analyses. According to this table, the addition of project generated traffic to the four study intersection will only result in minor changes to intersection LOS.

During the morning peak hour, the Union Road / Atherton Drive signalized intersection will continue to operate at acceptable LOS C conditions.

During the evening peak hour, the Union Road / Atherton Drive signalized intersection will continue to operate at acceptable LOS D conditions

**Table 30: Peak Hour Intersection LOS –Cumulative Plus Project Conditions**

Intersection	Control	Cumulative Plus Project Conditions			
		AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
Union Road / Atherton Drive	Signal	28.9	C	42.1	D
Main Street / Atherton Drive	Signal	30.0	C	31.3	C
Lakeside Avenue / Atherton Drive	SSSC	1.4 9.9 (SB RT)	A (entire) A (SB RT)	0.5 10.2 (SB RT)	A (entire) B (SB RT)
Tinnin Road / Valencia Place / Atherton Drive	SSSC	3.3 13.0 (SB LT) 13.1 (NB LT)	A (entire) B (SB LT) B (NB LT)	2.7 24.3 (SB LT) 26.5 (NB LT)	A (entire) C (SB LT) D (NB LT)

NOTES: LOS = LEVEL OF SERVICE. SSSC = SIDE-STREET STOP CONTROL. NB LT = NORTH-BOUND LEFT-TURN. SB LT = SOUTH-BOUND LEFT-TURN. **BOLDED** CELLS REPRESENT SIGNIFICANT IMPACTS.

<sup>1</sup> FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES.

SOURCE: FEHR & PEERS, 2019.

During both morning and evening peak hours, the Main Street / Atherton Drive signalized intersection will continue to operate at acceptable LOS B conditions.

At the Lakeside Avenue / Atherton Drive side street stop controlled intersection, the southbound right-turn movement will continue to operate at acceptable LOS A conditions during the AM peak hour and acceptable LOS B conditions during the PM peak hour.

At the Tinnin Road / Valencia Place / Atherton Drive street stop controlled intersection, the southbound left-turn movement will operate at acceptable LOS B during the AM peak hour and acceptable LOS C during the PM peak hour. The northbound left-turn movement will also operate at acceptable LOS B during the AM peak hour and acceptable LOS D during the PM peak hour.

The signal warrant analysis for Cumulative Plus Project conditions indicate that the intersection of Tinnin Road / Atherton Drive does not meet peak hour signal warrants for either AM and PM peak hour conditions as a result of increased traffic volumes on eastbound / westbound Atherton Drive. This is consistent with the fact that the City of Manteca did not identify the need for a traffic signal at the Tinnin Road / Atherton Drive intersection in the Public Facilities Improvement Program.

### Policy Consistency Analysis

The Manteca General Plan was adopted by the City in 2003 and amended most recently in 2016. The following 2011 General Plan Circulation Element goals and policies are relevant to circulation in Manteca.

#### Goals:

- Goal C-1. Provide for a circulation system that allows for the efficient movement of people, goods, and services within and through Manteca while minimizing public costs to build and maintain the system.
- Goal C-2. Provide complete streets designed to serve a broad spectrum of travel modes, including automobiles, public transit, walking, and bicycling.

- Goal C-3. Develop attractive streetscapes that include landscaping, street trees, planted berms, and landscaped medians.
- Goal C-4. Support the development of a Downtown area that is highly accessible to all modes of travel, focusing primarily on pedestrians, bicyclists, and transit riders.
- Goal C-5. Balance the level of service for all modes so that residents and visitors have a variety of transportation choices.
- Goal C-6. Maintain a safe transportation system for all modes.
- Goal C-7. Accommodate truck and freight movements by developing city-wide truck routes and encouraging the development of freight and warehousing centers near existing rail lines and spurs.
- Goal C-8. Establish reasonable parking requirements (minimum and maximum rates for uses) that limit parking encroachment while minimizing the amount of land consumed by parking lots.
- Goal C-9. Provide a safe, secure, and convenient bicycle route system that connects to retail, employment centers, public facilities, and parks.
- Goal C-10. Provide for safe and convenient pedestrian circulation.
- Goal C-11. Maintain a coordinated, efficient bus service that provides both an effective alternative to automobile use and serves members of the community that cannot drive.
- Goal C-12. Support and encourage regional transit connections that link Manteca to other cities.

#### Policies:

The policies in the Circulation Element are organized by topic. Policies for each topic most relevant to this project are summarized below.

- Level of Service: Policies C-P-1 through CP-3 promote balanced levels of service (LOS) across all modes and vehicular LOS of D or better, except in downtown and certain other locations where other goals predominate.
- Street System: Policies C-P-8 through C-P-11 and C-P-17 promote access and connectivity for all modes. Policy C-P-12 promotes use of roundabouts.
- Transportation Safety: Policies C-P-20 through C-P-22 promote hazard reduction, maintenance of sight distances, and development of landscape separated sidewalks, respectively.
- Parking: Policy C-P-23 notes that future growth in traffic volumes may require removal of on-street parking.
- Bikeways and Pedestrian Facilities: Policies C-P-29 through C-P-40 promote development of safe and complete bicycle and pedestrian networks across the city.
- Public Transportation: Policies C-P-41 through C-P-43 promote interregional bus and rail connections. Policy C-P-44 promotes intermodal connectivity. Policy C-P-45 and C-P-46 promote ridesharing. Policy C-P-48 promotes inclusion of transit on future roadways.
- Goods Movement: Policies C-P-50 and C-P-52 promote truck access where appropriate. Policy C-P-51 promotes rail access within the City.
- Transportation Demand Management: Policies C-P-53 through C-P-56 support programs which encourage alternatives to reduce the number and length of automobile trips.

The proposed project does not conflict with any of the above listed General Plan Circulation Element policies and goals. The proposed project would not generate a significant increase in traffic in the area and would not decrease LOS to unacceptable levels. In addition, the proposed project would not change the design of any existing pedestrian or bicycle facilities or create any new safety problems in the area. The proposed project will add a small amount of both pedestrians and bicyclists who will utilize existing, planned, and proposed facilities connecting the project site with the community at large. The internal pedestrian circulation system will be designed to the City's standard for pedestrian sidewalks.

The proposed project would not interfere with any existing bus routes and would not remove or relocate any existing bus stops. Based on the size of the project, the project would be expected to generate increased transit ridership to Manteca Transit Route 2 (westbound) and Transit Route 3 (eastbound) on Atherton Drive. The proposed project would not conflict with any transit plans or goals of the City of Manteca.

## Conclusion

Under Existing Plus Project Conditions, all four unsignalized study intersection would continue to operate at acceptable LOS C or better under AM and PM peak hour conditions.

The signal warrant analysis for Cumulative No Project conditions indicate that the intersection of Tinnin Road / Atherton Drive does not meet peak hour signal warrants for either AM and PM peak hour conditions as a result of increased traffic volumes on eastbound / westbound Atherton Drive.

Under Cumulative Plus Project Conditions, the addition of vehicle traffic generated by the proposed project would result in only a minor change in average vehicle delay. During the morning peak hour, the Union Road / Atherton Drive signalized intersection will continue to operate at acceptable LOS C conditions. During the evening peak hour, the Union Road / Atherton Drive signalized intersection will continue to operate at acceptable LOS D conditions. During both morning and evening peak hours, the Main Street / Atherton Drive signalized intersection will continue to operate at acceptable LOS B conditions.

Under Cumulative Plus Project Conditions, at the Lakeside Avenue / Atherton Drive side street stop controlled intersection, the southbound right-turn movement will continue to operate at acceptable LOS A conditions during the AM peak hour and acceptable LOS B conditions during the PM peak hour. At the Tinnin Road / Valencia Place / Atherton Drive street stop controlled intersection, the southbound left-turn movement will operate at acceptable LOS B during the AM peak hour and acceptable LOS C during the PM peak hour. The northbound left-turn movement will also operate at acceptable LOS B during the AM peak hour and acceptable LOS D during the PM peak hour.

The signal warrant analysis for Cumulative Plus Project Conditions indicate that the intersection of Tinnin Road / Atherton Drive does not meet peak hour signal warrants for either AM and PM peak hour conditions as a result of increased traffic volumes on eastbound / westbound Atherton Drive. This is consistent with the fact that the City of Manteca did not identify the need for a traffic signal at the Tinnin Road / Atherton Drive intersection in the PFIP. Therefore, impacts would be considered *less than significant*.

**Response c-d):** No site circulation or access issues have been identified that would cause a traffic safety problem/hazard or any unusual traffic congestion or delay. The volumes on the internal

roadways and drive aisles would be relatively low such that no significant conflicts would be expected with through traffic on Atherton Drive or Lakeside Avenue.

All emergency vehicles arriving to and from the proposed Valencia Place Apartment Project would be able to enter via Atherton Drive or Lakeside Avenue. All accesses would be designed to City standards that accommodate turning requirements for fire trucks. These multiple entry/exit points provide flexibility for emergency vehicles to access or evacuate from multiple directions during an emergency.

At the proposed project entrance on Atherton Drive, there are no safety, capacity, or sight distance issues identified with providing either an eastbound left-turn or westbound right-turn movement entering the project site.

In addition, at the proposed project entrance on Lakeside Avenue, there are no safety, capacity, or sight distance issues identified with providing a northbound right-turn movement entering the project site. Therefore, impacts associated with design features and emergency access would be considered *less than significant*.



**XVIII. TRIBAL CULTURAL RESOURCES**

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

**Responses to Checklist Questions**

**Responses a), b):** A record search was conducted for the project site and surrounding area through the CCIC of the California Historical Resources Information System on February 6, 2019 (CCIC file No.: 10978L). The record search indicates that: the project site does not contain any recorded prehistoric or historic archaeological resources or historic buildings. Based on the above information, the project site has a low to moderate potential for the discovery of prehistoric, ethnohistoric, or historic archaeological sites that may meet the definition of TCRs. Although no TCRs have been documented in the project site, the project is located in a region where significant cultural resources have been recorded and there remains a potential that undocumented archaeological resources that may meet the TCR definition could be unearthed or otherwise discovered during ground-disturbing and construction activities. Examples of significant archaeological discoveries that may meet the TCR definition would include villages and cemeteries. Due to the possible presence of undocumented TCRs within the project site, construction-related impacts on tribal cultural resources would be potentially significant. With implementation of the following mitigation measure, the proposed project would have a **less than significant** impact related to tribal cultural resources.

**Mitigation Measure(s)**

**Mitigation Measure TRIBAL-1:** *If cultural resources are discovered during project-related construction activities, all ground disturbances within a minimum of 50 feet of the find shall be halted until a qualified professional archaeologist can evaluate the discovery. The archaeologist shall examine the resources, assess their significance, and recommend appropriate procedures to the lead agency to either further investigate or mitigate adverse impacts. If the find is determined by the lead agency in consultation with the Native American tribe traditionally and culturally affiliated with the geographic area of the project site to be a tribal cultural resource and the discovered archaeological resource cannot be avoided, then applicable mitigation measures for the resource shall be discussed with the geographically affiliated tribe. Applicable mitigation measures that also take into account the cultural values and meaning of the discovered tribal cultural resource, including confidentiality if requested by the tribe, shall be completed (e.g., preservation in*

*place, data recovery program pursuant to PRC §21083.2[i]). During evaluation or mitigative treatment, ground disturbance and construction work could continue on other parts of the project site.*

***XIX. UTILITIES AND SERVICE SYSTEMS***

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

***Responses to Checklist Questions*****Responses a)-c):****Water**

It is anticipated that water supply for the proposed project would be local groundwater and treated surface water from SSJID's SCWSP. Water distribution will be by an underground distribution system to be installed as per the City of Manteca standards and specifications. The applicant for the proposed project will provide their proportionate share of required funding to the City for the acquisition and delivery of treated potable water supplies to the proposed project site through connection fees.

The City has adequate water supplies to support existing demand in the City in addition to the proposed project under average daily and maximum daily demand conditions. According to the City's 2015 Urban Water Management Plan (UWMP), water demand for current and proposed uses in the City of Manteca is 21,894 acre-feet per year (AFY). The City has a projected total supply of 26,428 AFY in the year 2020, leaving 4,534 AFY available. The City's 2015 UWMP Planning Area corresponds with the City SOI established in the City's 2023 General Plan. The City's 2015 UWMP included existing and projected water demands for existing and projected future land uses to be developed within the City's Sphere of Influence through 2030. The water demand projections in the City's 2015 UWMP included existing City water demands, future water demands for developments within the existing City limit, and future water demands for future service areas outside the existing City limit.

The City's 2023 General Plan designates the project area as CMU, which allows for residential densities of up to 25 dwelling units per acre. Therefore, the City's 2023 General Plan anticipated up to 489 units and an associated population of 1,457 persons within the project area. The analysis included in the City's UWMP assumed that the site would be developed with CMU uses. The project would not increase demand beyond the levels assumed for the site in the City's UWMP.

The proposed project would not result in insufficient water supplies available to serve the project from existing entitlements and resources. Therefore, a ***less than significant*** impact would occur related to water supply and water infrastructure.

### **Wastewater**

The City of Manteca owns and operates a wastewater collection, treatment, and disposal system, and provides sanitary sewerage service to the City of Manteca and a portion of the City of Lathrop. On April 17, 2015, the RWQCB adopted Waste Discharge Requirements Order No. R5-2015-0026 NPDES NO. CA0081558, prescribing waste discharge requirements for the City of Manteca Wastewater Quality Control Facility (WQCF) and allowing expansion of the plant up to 17.5 mgd.

The City's Wastewater Quality Control Facility Master Plan Update includes projected wastewater generation factors for various land uses. Based on these calculations it was determined that the City will have flows totaling 19.5 mgd as of the General Plan horizon of 2023 with a buildout capacity of 23.0 mgd. The study includes a reduction of industrial and general commercial wastewater generation factors to reflect historical water use data from local businesses.

According to the City's 2012 Wastewater Collection System Master Plan Update, High Density Residential uses (15.1 to 25.0 units per acre) are estimated to generated 3,789 gallons per acre per day. The project site includes 19.58 acres of High Density Residential. Using this rate, the proposed High Density Residential uses would generate approximately 1,621,692 gallons per day (gpd) of wastewater. The proposed project would increase the amount of wastewater requiring treatment. The wastewater would be treated at the WQCF. Occupancy of the proposed project would be prohibited without sewer allocation.

The City's available capacity would ensure that there would not be a determination by the wastewater treatment and/or collection provider that there is inadequate capacity to serve the proposed project's projected demand in addition to the provider's existing commitments. Additionally, any planned expansion to the WQCF with a subsequent allocation of capacity to the proposed project would ensure that there would not be a determination by the wastewater treatment and/or collection provider that there is inadequate capacity to serve the proposed Project's projected demand in addition to the provider's existing commitments.

As noted above, the City's 2023 General Plan designates the project area as CMU, which allows for residential densities of up to 25 dwelling units per acre. Therefore, the City's 2023 General Plan anticipated up to 489 units and an associated population of 1,457 persons within the project area.

Because the project applicant would pay City PFIP fees to develop the site, and adequate long-term wastewater treatment capacity is available to serve full build-out of the project, a ***less than significant*** impact would occur related to requiring or resulting in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

**Responses d), e):** The City of Manteca Solid Waste Division (SWD) provides solid waste hauling service for the City of Manteca and would serve the proposed project. Solid waste from Manteca is primarily landfilled at the Forward Sanitary Landfill, located northeast of Manteca. Other landfills used include Foothill Sanitary and North County.

The permitted maximum disposal at the Forward Landfill is 8,668 tons per day. The total permitted capacity of the landfill is 51.04 million cubic yards, which is expected to accommodate an operational life until January 1, 2020. The remaining capacity is 23,700,000 cubic yards. Solid waste generated by the proposed project was estimated based on CalRecycle generation rate estimates by use.

The residential uses are estimated to generate roughly 10 pounds per day per household. It is estimated that the proposed 428 residential units would generate 4,280 pounds per day (2.14 tons per day) of solid waste.

The Forward Landfill is projected to close in the year 2020. At that time the City can utilize the Foothill Landfill as a location for solid waste disposal. The City's solid waste per capita generation has decreased since 2007 due to the waste diversion efforts of the City. The permitted maximum disposal at the Forward Landfill is 8,668 tons per day. Currently, the average daily disposal is 620 tons per day. The total permitted capacity of the landfill is 51.04 million cubic yards. The addition of solid waste associated with the proposed project, approximately 2.14 tons per day at total buildout, to the Forward Landfill would not exceed the landfill's remaining capacity. The City will need to secure a new location of disposal of all solid waste generated in the City when the Forward landfill is ultimately closed. There are several options that the City will have to consider for solid waste disposal at that time which is estimated to be 2020. Because the project would increase the local waste stream, the project would subject to the City's waste connection fee.

Development of the site for CMU uses, which allows for up to 25 units per acre of residential, was assumed in the City's General Plan EIR. The project would not interfere with regulations related to solid waste, or generate waste in excess of the capacity of local infrastructure. Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

**XX. WILDFIRE**

<b>Would the project:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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	
d) 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**

There are no State Responsibility Areas (SRAs) within the vicinity of the Manteca Planning Area. The City of Manteca is not categorized as a "Very High" Fire Hazard Severity Zone (FHSZ) by CalFire. No cities or communities within San Joaquin County are categorized as a "Very High" FHSZ by CalFire. Although this CEQA topic only applies to areas within a SRA or Very High FHSZ, out of an abundance of caution, these checklist questions are analyzed below.

**Responses to Checklist Questions**

**Response a)** 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 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.

**Response b)** 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 project site is located 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.

**Response c)** The project includes development of infrastructure (water, sewer, and storm drainage) required to support the proposed multi-family use. The project site is surrounded by existing and future urban development. The project would not impair implementation of or



physically interfere with an adopted emergency response plan or emergency evacuation plan. The project would not require the installation or maintenance of infrastructure that may exacerbate fire risk. Therefore, impacts from project implementation would be considered ***less than significant*** relative to this topic.

**Response d)** The proposed project would require the installation of storm drainage infrastructure to ensure that storm waters properly drain from the project site and does not result in downstream flooding or major drainage changes. The proposed storm drainage plan includes an engineered network of storm drain lines, bioswales, and bio-retention basins. The project proposes to include two drainage basins: a basin in the northern half of the site (with 2.38 ac-ft of storage potential in the basin and 0.34-ac-ft of storage potential in the bio-retention area), and another basin in the southern half of the site (with 2.41-ac-ft of storage potential in the basin and 0.37-ac-ft of storage potential in the bio-retention area). Additionally, various bio-retention areas and bioswales would be located throughout the project site. The storm drainage plan was designed and engineered to ensure proper construction of storm drainage infrastructure to control runoff and prevent flooding, erosion, and sedimentation.

Runoff from the project site currently flows to the existing City storm drains located in Atherton Drive. Upon development of the site, stormwater would flow to the on-site retention basins and/or the existing storm drains in the adjacent roadways. Additionally, the project site is located within FEMA Zone X (un-shaded), indicating that the site is located outside of the 100-year flood hazard zone. Further, because the site is essentially flat and located in an existing urbanized area of the City, downstream landslides would not occur.

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.

Overall, 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**

**Response a):** This Initial Study includes an analysis of the project 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. 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.

**Response b):** This Initial Study includes an analysis of the project 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/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. 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 project's contribution to cumulative impacts.

The project would increase the population and use of public services and systems; however, it was found that there is adequate capacity to accommodate the project.

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.

**Response c):** 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 and Greenhouse Gas Modeling Outputs**

## VALENCIA APARTMENTS CalEEMod Assumptions

### PROJECT CHARACTERISTICS TAB:

*Project Location – Air District:* San Joaquin Valley Air Pollution Control District

*CEC Forecasting Climate Zone:* 2

*Land Use Setting:* Urban

*Start of Construction:* Monday, July 1, 2019

*Operational Year:* 2020

*Utility Company:* PG&E

*CO<sub>2</sub> Intensity Factor:* 290 lbs/MWh

- Note: Updated PG&E emission factor for 2020 reflecting RPS reductions per PG&E's *Greenhouse Gas Emission Factors: Guidance for PG&E Customers* (November 2015). Available: <[https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge\\_ghg\\_emission\\_factor\\_info\\_sheet.pdf](https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf)>.

### LAND USE TAB:

LAND USE TYPE AND SUBTYPE	UNIT AMOUNT AND METRIC <sup>1</sup>	ACREAGE <sup>1</sup>	SQUARE FOOTAGE	POPULATION <sup>2</sup>
Residential – Apartments Mid Rise	428 DU	19.58	--	1,361
<sup>1</sup> SOURCE: KUCHMAN ARCHITECTS PC, 2018.				
<sup>2</sup> ACCORDING TO THE MOST RECENT U.S. CENSUS (2014) AND DEPARTMENT OF FINANCE (2016) ESTIMATES, THE AVERAGE NUMBER OF PERSONS RESIDING IN A DWELLING UNIT IN THE CITY OF MANTECA IS 3.18.				

### CONSTRUCTION TAB – PHASING: CalEEMod Defaults

PHASE #	PHASE NAME	START DATE	END DATE	# DAYS/WEEK	# DAYS
1	Site Preparation	7/27/2019	8/9/2019	5	10
2	Grading	8/10/2019	9/20/2019	5	30
3	Paving	11/14/2020	12/11/2020	5	20
5	Building Construction	9/21/2019	11/13/2020	5	300
4	Architectural Coating	12/12/2020	1/8/2021	5	20

### CONSTRUCTION TAB – OFF-ROAD EQUIPMENT: CalEEMod Defaults

### OPERATIONAL TAB – MOBILE:

According to Fehr & Peers (2019), the project would result in 7.32 daily trips per unit (using ITE Land Use Code 220 - Apartments).

*MITIGATION TAB:*

*Traffic:*

- Project Setting: Low Density Suburban
- Increase Density: 428 du/19.58 ac = 21.9 du/ac
- Increase Destination Accessibility: Distance to Downtown/Job Center is 1.05 miles (from project site to downtown Manteca)
- Increase Transit Accessibility: Distance to Transit is 0.0 miles (Manteca Transit Routes 2 and 3 pass by and stop at the project site frontage along W. Atherton Drive)
- Improve Pedestrian Network: Project Site and Connecting Off-Site (project includes connections from the site to the adjacent shopping center)

*Area:*

- Only Natural Gas Hearth

*Energy:*

- Exceed Title 24: 15% Improvement
  - Note: The project would meet or exceed this mitigation by conforming to the current version of the Title 24 Energy Efficiency Standards.
- Install High Efficiency Lighting: 16% Lighting Energy Reduction
  - Note: According to CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*, a minimum of a 16% reduction in electricity usage is expected compared with low-efficiency lighting (i.e., metal halide post top lights as opposed to typical mercury cobrahead lights).
- Install High Efficiency Appliances: within all residences

*Water:*

- Install Low-flow Bathroom Faucets
- Install Low-flow Kitchen Faucets
- Install Low-flow Toilets
- Install Low-flow Showers
- Use Water-Efficient Irrigation Systems: CalEEMod Default % Reduction

Valencia Apartments - San Joaquin Valley Unified APCD Air District, Annual

**Valencia Apartments**  
**San Joaquin Valley Unified APCD Air District, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	428.00	Dwelling Unit	19.58	428,000.00	1361

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	45
Climate Zone	2			Operational Year	2021

Utility Company      Pacific Gas & Electric Company

CO2 Intensity (lb/MW/hr)	290	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - See CalEEMod assumptions

Land Use - See CalEEMod assumptions

Construction Phase -

Vehicle Trips - See CalEEMod assumptions

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Energy Use -

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Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	11.26	19.58
tblLandUse	Population	1,358.00	1,361.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblVehicleTrips	WD_TR	6.65	7.32

**2.0 Emissions Summary**

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**2.1 Overall Construction****Unmitigated Construction**

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
2019	0.2392	2.0628	1.6499	3.5100e-003	0.3232	0.0965	0.4196	0.1312	0.0898	0.2209	0.0000	315.4067	315.4067	0.0589	0.0000	316.8803
2020	3.2406	3.0804	3.2420	7.6400e-003	0.3201	0.1412	0.4613	0.0859	0.1327	0.2186	0.0000	683.7219	683.7219	0.0896	0.0000	685.9607
2021	1.2065	5.0600e-003	0.0104	2.0000e-005	1.4900e-003	2.9000e-004	1.7800e-003	4.0000e-004	2.9000e-004	6.9000e-004	0.0000	2.0549	2.0549	9.0000e-005	0.0000	2.0571
Maximum	3.2406	3.0804	3.2420	7.6400e-003	0.3232	0.1412	0.4613	0.1312	0.1327	0.2209	0.0000	683.7219	683.7219	0.0896	0.0000	685.9607

**Mitigated Construction**

Year	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
2019	0.2392	2.0628	1.6499	3.5100e-003	0.3232	0.0965	0.4196	0.1312	0.0898	0.2209	0.0000	315.4065	315.4065	0.0589	0.0000	316.8800
2020	3.2406	3.0804	3.2420	7.6400e-003	0.3201	0.1412	0.4613	0.0859	0.1327	0.2186	0.0000	683.7215	683.7215	0.0896	0.0000	685.9603
2021	1.2065	5.0600e-003	0.0104	2.0000e-005	1.4900e-003	2.9000e-004	1.7800e-003	4.0000e-004	2.9000e-004	6.9000e-004	0.0000	2.0549	2.0549	9.0000e-005	0.0000	2.0571
Maximum	3.2406	3.0804	3.2420	7.6400e-003	0.3232	0.1412	0.4613	0.1312	0.1327	0.2209	0.0000	683.7215	683.7215	0.0896	0.0000	685.9603



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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)					Maximum Mitigated ROG + NOX (tons/quarter)				
1	7-1-2019	9-30-2019	1.2568					1.2568				
2	10-1-2019	12-31-2019	1.0655					1.0655				
3	1-1-2020	3-31-2020	0.9567					0.9567				
4	4-1-2020	6-30-2020	0.9522					0.9522				
5	7-1-2020	9-30-2020	0.9626					0.9626				
6	10-1-2020	12-31-2020	3.5045					3.5045				
7	1-1-2021	3-31-2021	1.1540					1.1540				
		Highest	3.5045					3.5045				

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**2.2 Overall Operational****Unmitigated Operational**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Area	2.5875	0.2560	6.8768	0.0130		0.6217	0.6217		0.6217	0.6217	79.1565	190.6039	269.7604	0.3786	3.4000e-003	280.2390
Energy	0.0225	0.1923	0.0818	1.2300e-003		0.0155	0.0155		0.0155	0.0155	0.0000	462.2820	462.2820	0.0282	9.0400e-003	465.6816
Mobile	1.1259	12.1564	11.6983	0.0551	3.3010	0.0506	3.3516	0.8879	0.0478	0.9357	0.0000	5,115.2320	5,115.2320	0.3391	0.0000	5,123.7088
Waste						0.0000	0.0000		0.0000	0.0000	39.9649	0.0000	39.9649	2.3619	0.0000	99.0113
Water						0.0000	0.0000		0.0000	0.0000	8.8469	27.9423	36.7892	0.9115	0.0220	66.1417
<b>Total</b>	<b>3.7359</b>	<b>12.6046</b>	<b>18.6569</b>	<b>0.0693</b>	<b>3.3010</b>	<b>0.6878</b>	<b>3.9888</b>	<b>0.8879</b>	<b>0.6850</b>	<b>1.5729</b>	<b>127.9683</b>	<b>5,796.0602</b>	<b>5,924.0285</b>	<b>4.0192</b>	<b>0.0345</b>	<b>6,034.7823</b>

## Valencia Apartments - San Joaquin Valley Unified APCD Air District, Annual

**2.2 Overall Operational****Mitigated Operational**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Area	2.1885	0.1969	3.2530	1.1900e-003		0.0305	0.0305		0.0305	0.0305	0.0000	190.6039	190.6039	8.5800e-003	3.4000e-003	191.8315
Energy	0.0201	0.1714	0.0729	1.0900e-003		0.0139	0.0139		0.0139	0.0139	0.0000	427.5196	427.5196	0.0267	8.3800e-003	430.6839
Mobile	1.0941	11.7685	11.0863	0.0519	3.0732	0.0475	3.1208	0.8267	0.0449	0.8716	0.0000	4,816.2716	4,816.2716	0.3317	0.0000	4,824.5629
Waste						0.0000	0.0000		0.0000	0.0000	39.9649	0.0000	39.9649	2.3619	0.0000	99.0113
Water						0.0000	0.0000		0.0000	0.0000	7.0775	23.4789	30.5564	0.7293	0.0177	54.0482
<b>Total</b>	<b>3.3026</b>	<b>12.1368</b>	<b>14.4122</b>	<b>0.0542</b>	<b>3.0732</b>	<b>0.0919</b>	<b>3.1651</b>	<b>0.8267</b>	<b>0.0893</b>	<b>0.9159</b>	<b>47.0424</b>	<b>5,457.8740</b>	<b>5,504.9164</b>	<b>3.4581</b>	<b>0.0294</b>	<b>5,600.1376</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	11.60	3.71	22.75	21.91	6.90	86.64	20.65	6.90	86.97	41.77	63.24	5.83	7.07	13.96	14.62	7.20

**3.0 Construction Detail****Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	8/10/2019	9/20/2019	5	30	
2	Building Construction	Building Construction	9/21/2019	11/13/2020	5	300	
3	Paving	Paving	11/14/2020	12/11/2020	5	20	
4	Architectural Coating	Architectural Coating	12/12/2020	1/8/2021	5	20	
5	Site Preparation	Site Preparation	7/27/2019	8/9/2019	5	10	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 75**

**Acres of Paving: 0**

**Residential Indoor: 866,700; Residential Outdoor: 288,900; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	308.00	46.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	62.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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**3.1 Mitigation Measures Construction****3.2 Grading - 2019****Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5520	83.5520	0.0264	0.0000	84.2129
<b>Total</b>	<b>0.0711</b>	<b>0.8178</b>	<b>0.5007</b>	<b>9.3000e-004</b>	<b>0.1301</b>	<b>0.0357</b>	<b>0.1658</b>	<b>0.0540</b>	<b>0.0329</b>	<b>0.0868</b>	<b>0.0000</b>	<b>83.5520</b>	<b>83.5520</b>	<b>0.0264</b>	<b>0.0000</b>	<b>84.2129</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3900e-003	9.8000e-004	9.8500e-003	2.0000e-005	2.4000e-003	2.0000e-005	2.4200e-003	6.4000e-004	2.0000e-005	6.5000e-004	0.0000	2.2226	2.2226	7.0000e-005	0.0000	2.2244
<b>Total</b>	<b>1.3900e-003</b>	<b>9.8000e-004</b>	<b>9.8500e-003</b>	<b>2.0000e-005</b>	<b>2.4000e-003</b>	<b>2.0000e-005</b>	<b>2.4200e-003</b>	<b>6.4000e-004</b>	<b>2.0000e-005</b>	<b>6.5000e-004</b>	<b>0.0000</b>	<b>2.2226</b>	<b>2.2226</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>2.2244</b>



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**3.2 Grading - 2019****Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust	0.0711	0.8178	0.5007	9.3000e-004	0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004	0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0711	0.8178	0.5007	9.3000e-004	0.1301	0.0357	0.1658	0.0540	0.0329	0.0868	0.0000	83.5519	83.5519	0.0264	0.0000	84.2128

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3900e-003	9.8000e-004	9.8500e-003	2.0000e-005	2.4000e-003	2.0000e-005	2.4200e-003	6.4000e-004	2.0000e-005	6.5000e-004	0.0000	2.2226	2.2226	7.0000e-005	0.0000	2.2244
Total	1.3900e-003	9.8000e-004	9.8500e-003	2.0000e-005	2.4000e-003	2.0000e-005	2.4200e-003	6.4000e-004	2.0000e-005	6.5000e-004	0.0000	2.2226	2.2226	7.0000e-005	0.0000	2.2244

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**3.3 Building Construction - 2019****Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Off-Road	0.0850	0.7588	0.6179	9.7000e-004		0.0464	0.0464		0.0437	0.0437	0.0000	84.6375	84.6375	0.0206	0.0000	85.1530
<b>Total</b>	<b>0.0850</b>	<b>0.7588</b>	<b>0.6179</b>	<b>9.7000e-004</b>		<b>0.0464</b>	<b>0.0464</b>		<b>0.0437</b>	<b>0.0437</b>	<b>0.0000</b>	<b>84.6375</b>	<b>84.6375</b>	<b>0.0206</b>	<b>0.0000</b>	<b>85.1530</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0900e-003	0.2209	0.0444	4.7000e-004	0.0110	1.6700e-003	0.0127	3.1700e-003	1.6000e-003	4.7700e-003	0.0000	45.0970	45.0970	3.7600e-003	0.0000	45.1911
Worker	0.0516	0.0362	0.3639	9.1000e-004	0.0887	6.5000e-004	0.0893	0.0236	6.0000e-004	0.0242	0.0000	82.1465	82.1465	2.6300e-003	0.0000	82.2122
<b>Total</b>	<b>0.0596</b>	<b>0.2571</b>	<b>0.4083</b>	<b>1.3800e-003</b>	<b>0.0996</b>	<b>2.3200e-003</b>	<b>0.1020</b>	<b>0.0267</b>	<b>2.2000e-003</b>	<b>0.0289</b>	<b>0.0000</b>	<b>127.2436</b>	<b>127.2436</b>	<b>6.3900e-003</b>	<b>0.0000</b>	<b>127.4033</b>

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**3.3 Building Construction - 2019****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0850	0.7588	0.6179	9.7000e-004		0.0464	0.0464		0.0437	0.0437	0.0000	84.6374	84.6374	0.0206	0.0000	85.1529
<b>Total</b>	<b>0.0850</b>	<b>0.7588</b>	<b>0.6179</b>	<b>9.7000e-004</b>		<b>0.0464</b>	<b>0.0464</b>		<b>0.0437</b>	<b>0.0437</b>	<b>0.0000</b>	<b>84.6374</b>	<b>84.6374</b>	<b>0.0206</b>	<b>0.0000</b>	<b>85.1529</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0900e-003	0.2209	0.0444	4.7000e-004	0.0110	1.6700e-003	0.0127	3.1700e-003	1.6000e-003	4.7700e-003	0.0000	45.0970	45.0970	3.7600e-003	0.0000	45.1911
Worker	0.0516	0.0362	0.3639	9.1000e-004	0.0887	6.5000e-004	0.0893	0.0236	6.0000e-004	0.0242	0.0000	82.1465	82.1465	2.6300e-003	0.0000	82.2122
<b>Total</b>	<b>0.0596</b>	<b>0.2571</b>	<b>0.4083</b>	<b>1.3800e-003</b>	<b>0.0996</b>	<b>2.3200e-003</b>	<b>0.1020</b>	<b>0.0267</b>	<b>2.2000e-003</b>	<b>0.0289</b>	<b>0.0000</b>	<b>127.2436</b>	<b>127.2436</b>	<b>6.3900e-003</b>	<b>0.0000</b>	<b>127.4033</b>

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**3.3 Building Construction - 2020****Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Off-Road	0.2417	2.1872	1.9207	3.0700e-003		0.1273	0.1273		0.1197	0.1197	0.0000	264.0354	264.0354	0.0644	0.0000	265.6458
<b>Total</b>	<b>0.2417</b>	<b>2.1872</b>	<b>1.9207</b>	<b>3.0700e-003</b>		<b>0.1273</b>	<b>0.1273</b>		<b>0.1197</b>	<b>0.1197</b>	<b>0.0000</b>	<b>264.0354</b>	<b>264.0354</b>	<b>0.0644</b>	<b>0.0000</b>	<b>265.6458</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0208	0.6383	0.1211	1.4900e-003	0.0348	3.5200e-003	0.0383	0.0100	3.3600e-003	0.0134	0.0000	141.5984	141.5984	0.0112	0.0000	141.8779
Worker	0.1484	0.1008	1.0239	2.7900e-003	0.2807	2.0000e-003	0.2827	0.0746	1.8400e-003	0.0765	0.0000	252.0799	252.0799	7.2200e-003	0.0000	252.2604
<b>Total</b>	<b>0.1692</b>	<b>0.7391</b>	<b>1.1449</b>	<b>4.2800e-003</b>	<b>0.3155</b>	<b>5.5200e-003</b>	<b>0.3210</b>	<b>0.0847</b>	<b>5.2000e-003</b>	<b>0.0899</b>	<b>0.0000</b>	<b>393.6783</b>	<b>393.6783</b>	<b>0.0184</b>	<b>0.0000</b>	<b>394.1383</b>

## Valencia Apartments - San Joaquin Valley Unified APCD Air District, Annual

**3.3 Building Construction - 2020****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2417	2.1872	1.9207	3.0700e-003		0.1273	0.1273		0.1197	0.1197	0.0000	264.0351	264.0351	0.0644	0.0000	265.6455
Total	0.2417	2.1872	1.9207	3.0700e-003		0.1273	0.1273		0.1197	0.1197	0.0000	264.0351	264.0351	0.0644	0.0000	265.6455

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0208	0.6383	0.1211	1.4900e-003	0.0348	3.5200e-003	0.0383	0.0100	3.3600e-003	0.0134	0.0000	141.5984	141.5984	0.0112	0.0000	141.8779
Worker	0.1484	0.1008	1.0239	2.7900e-003	0.2807	2.0000e-003	0.2827	0.0746	1.8400e-003	0.0765	0.0000	252.0799	252.0799	7.2200e-003	0.0000	252.2604
Total	0.1692	0.7391	1.1449	4.2800e-003	0.3155	5.5200e-003	0.3210	0.0847	5.2000e-003	0.0899	0.0000	393.6783	393.6783	0.0184	0.0000	394.1383

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**3.4 Paving - 2020****Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1902
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0136</b>	<b>0.1407</b>	<b>0.1465</b>	<b>2.3000e-004</b>		<b>7.5300e-003</b>	<b>7.5300e-003</b>		<b>6.9300e-003</b>	<b>6.9300e-003</b>	<b>0.0000</b>	<b>20.0282</b>	<b>20.0282</b>	<b>6.4800e-003</b>	<b>0.0000</b>	<b>20.1902</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.3000e-004	4.3700e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0769	1.0769	3.0000e-005	0.0000	1.0777
<b>Total</b>	<b>6.3000e-004</b>	<b>4.3000e-004</b>	<b>4.3700e-003</b>	<b>1.0000e-005</b>	<b>1.2000e-003</b>	<b>1.0000e-005</b>	<b>1.2100e-003</b>	<b>3.2000e-004</b>	<b>1.0000e-005</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>1.0769</b>	<b>1.0769</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.0777</b>



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**3.4 Paving - 2020****Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0136</b>	<b>0.1407</b>	<b>0.1465</b>	<b>2.3000e-004</b>		<b>7.5300e-003</b>	<b>7.5300e-003</b>		<b>6.9300e-003</b>	<b>6.9300e-003</b>	<b>0.0000</b>	<b>20.0282</b>	<b>20.0282</b>	<b>6.4800e-003</b>	<b>0.0000</b>	<b>20.1901</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.3000e-004	4.3700e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0769	1.0769	3.0000e-005	0.0000	1.0777
<b>Total</b>	<b>6.3000e-004</b>	<b>4.3000e-004</b>	<b>4.3700e-003</b>	<b>1.0000e-005</b>	<b>1.2000e-003</b>	<b>1.0000e-005</b>	<b>1.2100e-003</b>	<b>3.2000e-004</b>	<b>1.0000e-005</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>1.0769</b>	<b>1.0769</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.0777</b>

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**3.5 Architectural Coating - 2020****Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Archit. Coating	2.8120					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-003	0.0118	0.0128	2.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	1.7873	1.7873	1.4000e-004	0.0000	1.7907
<b>Total</b>	<b>2.8137</b>	<b>0.0118</b>	<b>0.0128</b>	<b>2.0000e-005</b>		<b>7.8000e-004</b>	<b>7.8000e-004</b>		<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>1.7873</b>	<b>1.7873</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.7907</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8300e-003	1.2500e-003	0.0127	3.0000e-005	3.4700e-003	2.0000e-005	3.4900e-003	9.2000e-004	2.0000e-005	9.4000e-004	0.0000	3.1158	3.1158	9.0000e-005	0.0000	3.1181
<b>Total</b>	<b>1.8300e-003</b>	<b>1.2500e-003</b>	<b>0.0127</b>	<b>3.0000e-005</b>	<b>3.4700e-003</b>	<b>2.0000e-005</b>	<b>3.4900e-003</b>	<b>9.2000e-004</b>	<b>2.0000e-005</b>	<b>9.4000e-004</b>	<b>0.0000</b>	<b>3.1158</b>	<b>3.1158</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>3.1181</b>

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**3.5 Architectural Coating - 2020****Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Archit. Coating	2.8120					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-003	0.0118	0.0128	2.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	1.7873	1.7873	1.4000e-004	0.0000	1.7907
<b>Total</b>	<b>2.8137</b>	<b>0.0118</b>	<b>0.0128</b>	<b>2.0000e-005</b>		<b>7.8000e-004</b>	<b>7.8000e-004</b>		<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>1.7873</b>	<b>1.7873</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.7907</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8300e-003	1.2500e-003	0.0127	3.0000e-005	3.4700e-003	2.0000e-005	3.4900e-003	9.2000e-004	2.0000e-005	9.4000e-004	0.0000	3.1158	3.1158	9.0000e-005	0.0000	3.1181
<b>Total</b>	<b>1.8300e-003</b>	<b>1.2500e-003</b>	<b>0.0127</b>	<b>3.0000e-005</b>	<b>3.4700e-003</b>	<b>2.0000e-005</b>	<b>3.4900e-003</b>	<b>9.2000e-004</b>	<b>2.0000e-005</b>	<b>9.4000e-004</b>	<b>0.0000</b>	<b>3.1158</b>	<b>3.1158</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>3.1181</b>

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**3.5 Architectural Coating - 2021****Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Archit. Coating	1.2052					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6000e-004	4.5800e-003	5.4500e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	0.7660	0.7660	5.0000e-005	0.0000	0.7673
<b>Total</b>	<b>1.2058</b>	<b>4.5800e-003</b>	<b>5.4500e-003</b>	<b>1.0000e-005</b>		<b>2.8000e-004</b>	<b>2.8000e-004</b>		<b>2.8000e-004</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>0.7660</b>	<b>0.7660</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.7673</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2000e-004	4.7000e-004	4.9200e-003	1.0000e-005	1.4900e-003	1.0000e-005	1.5000e-003	4.0000e-004	1.0000e-005	4.0000e-004	0.0000	1.2889	1.2889	3.0000e-005	0.0000	1.2898
<b>Total</b>	<b>7.2000e-004</b>	<b>4.7000e-004</b>	<b>4.9200e-003</b>	<b>1.0000e-005</b>	<b>1.4900e-003</b>	<b>1.0000e-005</b>	<b>1.5000e-003</b>	<b>4.0000e-004</b>	<b>1.0000e-005</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.2889</b>	<b>1.2889</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.2898</b>

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**3.5 Architectural Coating - 2021****Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Archit. Coating	1.2052					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6000e-004	4.5800e-003	5.4500e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	0.7660	0.7660	5.0000e-005	0.0000	0.7673
<b>Total</b>	<b>1.2058</b>	<b>4.5800e-003</b>	<b>5.4500e-003</b>	<b>1.0000e-005</b>		<b>2.8000e-004</b>	<b>2.8000e-004</b>		<b>2.8000e-004</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>0.7660</b>	<b>0.7660</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.7673</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2000e-004	4.7000e-004	4.9200e-003	1.0000e-005	1.4900e-003	1.0000e-005	1.5000e-003	4.0000e-004	1.0000e-005	4.0000e-004	0.0000	1.2889	1.2889	3.0000e-005	0.0000	1.2898
<b>Total</b>	<b>7.2000e-004</b>	<b>4.7000e-004</b>	<b>4.9200e-003</b>	<b>1.0000e-005</b>	<b>1.4900e-003</b>	<b>1.0000e-005</b>	<b>1.5000e-003</b>	<b>4.0000e-004</b>	<b>1.0000e-005</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.2889</b>	<b>1.2889</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.2898</b>

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**3.6 Site Preparation - 2019****Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust	0.0217	0.2279	0.1103	1.9000e-004	0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004	0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0217	0.2279	0.1103	1.9000e-004	0.0903	0.0120	0.1023	0.0497	0.0110	0.0607	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	2.9000e-004	2.9500e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6668	0.6668	2.0000e-005	0.0000	0.6673
Total	4.2000e-004	2.9000e-004	2.9500e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6668	0.6668	2.0000e-005	0.0000	0.6673



## Valencia Apartments - San Joaquin Valley Unified APCD Air District, Annual

**3.6 Site Preparation - 2019****Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust	0.0217	0.2279	0.1103	1.9000e-004	0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004	0.0903	0.0120	0.0120	0.0110	0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	0.0217	0.2279	0.1103	1.9000e-004	0.0903	0.0120	0.1023	0.0497	0.0110	0.0607	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	2.9000e-004	2.9500e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6668	0.6668	2.0000e-005	0.0000	0.6673
Total	4.2000e-004	2.9000e-004	2.9500e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6668	0.6668	2.0000e-005	0.0000	0.6673

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0941	11.7685	11.0863	0.0519	3.0732	0.0475	3.1208	0.8267	0.0449	0.8716	0.0000	4,816.271 6	4,816.271 6	0.3317	0.0000	4,824.562 9
Unmitigated	1.1259	12.1564	11.6983	0.0551	3.3010	0.0506	3.3516	0.8879	0.0478	0.9357	0.0000	5,115.232 0	5,115.232 0	0.3391	0.0000	5,123.708 8

**4.2 Trip Summary Information**

	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Land Use					
Apartment Mid Rise	3,132.96	2,734.92	2508.08	8,655,282	8,058,067
Total	3,132.96	2,734.92	2,508.08	8,655,282	8,058,067

**4.3 Trip Type Information**

	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Land Use									
Apartment Mid Rise	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3

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**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.506092	0.032602	0.169295	0.124521	0.019914	0.005374	0.021664	0.110051	0.001797	0.001623	0.005307	0.000969	0.000792

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

Exceed Title 24

Install High Efficiency Lighting

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	229.0669	229.0669	0.0229	4.7400e-003	231.0519
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	239.6382	239.6382	0.0240	4.9600e-003	241.7148
Natural Gas Mitigated	0.0201	0.1714	0.0729	1.0900e-003		0.0139	0.0139		0.0139	0.0139	0.0000	198.4528	198.4528	3.8000e-003	3.6400e-003	199.6321
Natural Gas Unmitigated	0.0225	0.1923	0.0818	1.2300e-003		0.0155	0.0155		0.0155	0.0155	0.0000	222.6438	222.6438	4.2700e-003	4.0800e-003	223.9668

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**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr											MT/yr				
Apartments Mid Rise	4.17219e+006	0.0225	0.1923	0.0818	1.2300e-003		0.0155	0.0155		0.0155	0.0155	0.0000	222.6438	222.6438	4.2700e-003	4.0800e-003	223.9668
<b>Total</b>		<b>0.0225</b>	<b>0.1923</b>	<b>0.0818</b>	<b>1.2300e-003</b>		<b>0.0155</b>	<b>0.0155</b>		<b>0.0155</b>	<b>0.0155</b>	<b>0.0000</b>	<b>222.6438</b>	<b>222.6438</b>	<b>4.2700e-003</b>	<b>4.0800e-003</b>	<b>223.9668</b>

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr											MT/yr				
Apartments Mid Rise	3.71886e+006	0.0201	0.1714	0.0729	1.0900e-003		0.0139	0.0139		0.0139	0.0139	0.0000	198.4528	198.4528	3.8000e-003	3.6400e-003	199.6321
<b>Total</b>		<b>0.0201</b>	<b>0.1714</b>	<b>0.0729</b>	<b>1.0900e-003</b>		<b>0.0139</b>	<b>0.0139</b>		<b>0.0139</b>	<b>0.0139</b>	<b>0.0000</b>	<b>198.4528</b>	<b>198.4528</b>	<b>3.8000e-003</b>	<b>3.6400e-003</b>	<b>199.6321</b>

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**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.82176e +006	239.6382	0.0240	4.9600e- 003	241.7148
<b>Total</b>		<b>239.6382</b>	<b>0.0240</b>	<b>4.9600e- 003</b>	<b>241.7148</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.7414e +006	229.0669	0.0229	4.7400e- 003	231.0519
<b>Total</b>		<b>229.0669</b>	<b>0.0229</b>	<b>4.7400e- 003</b>	<b>231.0519</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**

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Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.1885	0.1969	3.2530	1.1900e-003		0.0305	0.0305		0.0305	0.0305	0.0000	190.6039	190.6039	8.5800e-003	3.4000e-003	191.8315
Unmitigated	2.5875	0.2560	6.8768	0.0130		0.6217	0.6217		0.6217	0.6217	79.1565	190.6039	269.7604	0.3786	3.4000e-003	280.2390

## 6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4017					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.6716					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.4178	0.2192	3.6919	0.0129		0.6041	0.6041		0.6041	0.6041	79.1565	185.4128	264.5693	0.3736	3.4000e-003	274.9221
Landscaping	0.0965	0.0368	3.1849	1.7000e-004		0.0176	0.0176		0.0176	0.0176	0.0000	5.1911	5.1911	5.0300e-003	0.0000	5.3169
<b>Total</b>	<b>2.5875</b>	<b>0.2560</b>	<b>6.8768</b>	<b>0.0130</b>		<b>0.6217</b>	<b>0.6217</b>		<b>0.6217</b>	<b>0.6217</b>	<b>79.1565</b>	<b>190.6039</b>	<b>269.7604</b>	<b>0.3786</b>	<b>3.4000e-003</b>	<b>280.2390</b>

## Valencia Apartments - San Joaquin Valley Unified APCD Air District, Annual

**6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4017					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.6716					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0187	0.1601	0.0681	1.0200e-003		0.0129	0.0129		0.0129	0.0129	0.0000	185.4128	185.4128	3.5500e-003	3.4000e-003	186.5146
Landscaping	0.0965	0.0368	3.1849	1.7000e-004		0.0176	0.0176		0.0176	0.0176	0.0000	5.1911	5.1911	5.0300e-003	0.0000	5.3169
<b>Total</b>	<b>2.1885</b>	<b>0.1969</b>	<b>3.2530</b>	<b>1.1900e-003</b>		<b>0.0305</b>	<b>0.0305</b>		<b>0.0305</b>	<b>0.0305</b>	<b>0.0000</b>	<b>190.6039</b>	<b>190.6039</b>	<b>8.5800e-003</b>	<b>3.4000e-003</b>	<b>191.8315</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System



## Valencia Apartments - San Joaquin Valley Unified APCD Air District, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	30.5564	0.7293	0.0177	54.0482
Unmitigated	36.7892	0.9115	0.0220	66.1417

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	27.8859 / 17.5803	36.7892	0.9115	0.0220	66.1417
<b>Total</b>		<b>36.7892</b>	<b>0.9115</b>	<b>0.0220</b>	<b>66.1417</b>

## Valencia Apartments - San Joaquin Valley Unified APCD Air District, Annual

**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	22.3087 16.5079	30.5564	0.7293	0.0177	54.0482
<b>Total</b>		<b>30.5564</b>	<b>0.7293</b>	<b>0.0177</b>	<b>54.0482</b>

**8.0 Waste Detail****8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	39.9649	2.3619	0.0000	99.0113
Unmitigated	39.9649	2.3619	0.0000	99.0113

## Valencia Apartments - San Joaquin Valley Unified APCD Air District, Annual

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	196.88	39.9649	2.3619	0.0000	99.0113
<b>Total</b>		<b>39.9649</b>	<b>2.3619</b>	<b>0.0000</b>	<b>99.0113</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	196.88	39.9649	2.3619	0.0000	99.0113
<b>Total</b>		<b>39.9649</b>	<b>2.3619</b>	<b>0.0000</b>	<b>99.0113</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

Valencia Apartments - San Joaquin Valley Unified APCD Air District, Annual

**10.0 Stationary Equipment**

**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

**User Defined Equipment**

Equipment Type	Number
----------------	--------

**11.0 Vegetation**

## Off-road Mobile (Construction) Energy Usage

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-road vehicles use diesel fuel as an energy source. Site preparation, and grading energy were used as the basis of this calculation.

<b>Given Factor:</b>	<b>86.44 metric tons</b>	<b>CO2</b>	<b>(provided in CalEEMod Output File)</b>
Conversion Factor:	2204.62 pounds	per metric ton	
<b>Intermediate Result:</b>	<b>190,561 pounds</b>	<b>CO2</b>	
Conversion Factor:	22.38 pounds	CO2 per 1 gallon of diesel fuel	(Source: U.S. EIA, 2016.
<b>Final Result:</b>	<b>8,514.80 gallons</b>	<b>diesel fuel</b>	Website: <a href="http://www.eia.gov/tools/faqs/faq.cfm?id=307&amp;t=11">http://www.eia.gov/tools/faqs/faq.cfm?id=307&amp;t=11</a> )

On-road Mobile (Operational) Energy Usage

Note: For the sake of simplicity, it was assumed that passenger vehicles, light duty trucks, motorcycles, and mobile homes use gasoline, and all medium-duty trucks, heavy-duty trucks, and buses use diesel fuel.

Site preparation, and grading energy were used as the basis of this calculation.

Unmitigated:

Step 1: Total Net Daily Trips (provi 86.4372  
3,134

<i>Res H-W</i>	<i>Res H-S</i>	<i>Res H-O</i>
Trip Length (miles) (provided by CalEEMod)		
10.8	7.3	7.5
Trip %		
45.60%	19.00%	35.40%
Average Trip Length (weighted average)		
8.9668		

Therefore:  
Average Daily VMT:  
28,102

Step 2:

Fleet Mix (provided by CalEEMod v2016.3.2)											
LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	MH
50.6%	3.3%	16.9%		12.5%	2.0%	0.5%	2.2%	11.0%	0.2%	0.1%	0.0%

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2021						
LDA	LDT1	LDT2	MDV	MCY	MH	OBUS
29.93	24.88	22.22	16.03	39.9	6.57	6.57

Diesel MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2021					
LHD1	LHD2	MHD	HHD	UBUS	SBUS
17.33	15.76	8.1	5.53	4.68	7.23

Therefore:  
Weighted Average MPG Factors  
Gasoline: 26.0 Diesel: 7.7

Step 3:

Therefore:	900	daily gallons of gasoline	589	daily gallons of diesel
or	328,391	annual gallons of gasoline	215,003	annual gallons of diesel

# On-road Mobile (Construction) Energy Usage - Site Preparation

Site preparation, and grading energy were used as the basis of this calculation.

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**  
18 86

**Worker Trip Length (miles) (provided by CalEEMod)**  
10.8

Therefore:  
**Average Worker Daily VMT:**  
194

Step 2: Given:  
**Assumed Fleet Mix for Workers (provided by CalEEMod)**  
LDA LDT1 LDT2  
0.3333333 0.3333333 0.3333333

And:  
**Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2021**  
LDA LDT1 LDT2  
29.93 24.88 22.22

Therefore:  
**Weighted Average Worker MPG Factor**  
25.7

Step 3: **Therefore:**  
7.6 Worker daily gallons of gasoline

Step 4: 5 # of Days (see CalEEMod)

Therefore:  
**38** Total gallons of gasoline



On-road Mobile (Construction) Energy Usage - Grading

Site preparation, and grading energy were used as the basis of this calculation.

Step 1: Total Daily Worker Trips (provided by CalEEMod)

	20	86
--	----	----

Worker Trip Length (miles) (provided by CalEEMod)

	10.8
--	------

Therefore:

Average Worker Daily VMT:  
216

Step 2:

Given:  
Assumed Fleet Mix for Workers (provided by CalEEMod)

LDA	LDT1	LDT2
0.3333333	0.3333333	0.3333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2021

LDA	LDT1	LDT2
29.93	24.88	22.22

Therefore:

Weighted Average Worker MPG Factor  
25.7

Step 3:

Therefore:  
8.4 Worker daily gallons of gasoline

Step 4:

8 # of Days (see CalEEMod)

Therefore:

Result: 67 Total gallons of gasoline

On-road Mobile (Construction) Energy Usage - Building Construction

Site preparation, and grading energy were used as the basis of this calculation.

Step 1:	Total Daily Worker Trips (provided by CalEEMod)	86	Total Daily Vendor Trips (provided by CalEEMod)	46	Total Daily Hauler Trips (provided by CalEEMod)	0
	Worker Trip Length (miles) (provided by CalEEMod)	10.8	Vendor Trip Length (miles) (provided by CalEEMod)	10.8	Hauling Trip Length (miles) (provided by CalEEMod)	0
	Therefore: Average Worker Daily VMT:	3,326.40	Average Vendor Daily VMT:	497	Average Hauling Daily VMT:	-

Step 2:	Given:					
	Assumed Fleet Mix for Workers (provided by CalEEMod)					
	LDA	LDT1	LDT2			
	0.33333333	0.33333333	0.33333333			
	Assumed Fleet Mix for Vendors					
	MHD		HHD			
		0.5	0.5			

	And:					
	MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2021					
	Gasoline:			Diesel:		
	LDA	LDT1	LDT2	MHD	HHD	
	29.93	24.88	22.22	8.1	5.53	
	Therefore:					
	Weighted Average Worker (Gasoline) MPG Factor			Weighted Average Vendor (Diesel) MPG Factor		
	25.7			6.8		

Step 3:	Therefore:	130	Worker daily gallons of gasoline	73	Vendor daily gallons of diesel	
Step 4:		273	# of Days (see CalEEMod)			
	Therefore:	35,367	Total gallons of gasoline	19,901	Total gallons of diesel	

# On-road Mobile (Construction) Energy Usage - Paving

Site preparation, and grading energy were used as the basis of this calculation.

Step 1: Total Daily Worker Trips (provided by CalEEMod)

15 86

Worker Trip Length (miles) (provided by CalEEMod)

10.8

Therefore:

Average Worker Daily VMT:

162

Step 2:

Given:

Assumed Fleet Mix for Workers (provided by CalEEMod)

LDA	LDT1	LDT2
0.3333333	0.3333333	0.3333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

LDA	LDT1	LDT2
29.93	24.88	22.22

Therefore:

Weighted Average Worker MPG Factor

25.7

Step 3:

Therefore:

6.3 Worker daily gallons of gasoline

Step 4:

22 # of Days (see CalEEMod)

Therefore:

Result: 139 Total gallons of gasoline

# On-road Mobile (Construction) Energy Usage - Architectural Coating

Site preparation, and grading energy were used as the basis of this calculation.

Step 1: Total Daily Worker Trips (provided by CalEEMod) 86

Worker Trip Length (miles) (provided by CalEEMod) 10.8

Therefore:  
Average Worker Daily VMT: 670

Step 2: Given:  
Assumed Fleet Mix for Workers (provided by CalEEMod)

LDA	LDT1	LDT2
0.3333333	0.3333333	0.3333333

And:  
Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

LDA	LDT1	LDT2
29.93	24.88	22.22

Therefore:  
Weighted Average Worker MPG Factor 25.7

Step 3: Therefore: 26.1 Worker daily gallons of gasoline

Step 4: 18 # of Days (see CalEEMod)

Therefore: 469 Total gallons of gasoline

# **Appendix B**

## **Environmental Noise Analysis**

# Valencia Apartments Environmental Noise Analysis

Manteca, California

March 9, 2019

jcb Project # 2019-105

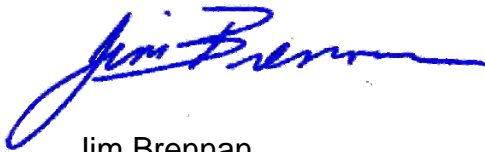
**Prepared for:**



Attn:  
Elise Carroll  
Associate Planner  
1020 Suncast Lane, Suite 106  
El Dorado Hills, CA 95762

**Prepared by:**

j.c. brennan & associates, Inc.

A handwritten signature in blue ink, reading "Jim Brennan".

Jim Brennan  
President  
Member, Institute of Noise Control Engineering (INCE)

This section provides a general description of the existing noise environment in the proposed Valencia Apartments project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts due to, and upon the proposed project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment. Mitigation measures have been identified for significant noise-related impacts.

The Valencia Apartments Project (project site) is currently vacant and undeveloped. The project site includes approximately 19.4 acres located in the south-central portion of the City of Manteca, south of State Route (SR) 120, in San Joaquin County, California. The site is bound by Quintal Road and SR 120 to the north, undeveloped agricultural land to the east, W. Atherton Drive to the south, and Lakeside Avenue to the west. Surrounding land uses include SR 120 and single-family residential uses to the north, agricultural land (fields and orchards), Quintal Road, and an SR 120 off-ramp to the east, W. Atherton Drive and existing and future single-family residential uses to the south, and Lakeside Avenue, existing and future commercial and retail uses (including, but not limited to, Bass Pro Shop, Hampton Inn & Suites, and AMC Showplace), and associated parking lots to the west.

Figure 1 shows an aerial view of the project area and Figure 2 shows the site plan with the locations of noise measurement sites.

## ENVIRONMENTAL SETTING

### KEY TERMS

<b>Acoustics</b>	The science of sound.
<b>Ambient Noise</b>	The distinctive acoustical characteristics of a given area 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.
<b>Attenuation</b>	The reduction of noise.
<b>A-Weighting</b>	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
<b>Decibel or dB</b>	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
<b>CNEL</b>	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.
<b>Frequency</b>	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
<b>Impulsive</b>	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
<b>L<sub>dn</sub></b>	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.



<b>L<sub>eq</sub></b>	Equivalent or energy-averaged sound level.
<b>L<sub>max</sub></b>	The highest root-mean-square (RMS) sound level measured over a given period of time.
<b>L<sub>(n)</sub></b>	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50 percent of the time during the one hour period.
<b>Loudness</b>	A subjective term for the sensation of the magnitude of sound.
<b>Noise</b>	Unwanted sound.
<b>SEL</b>	Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.



Figure 1  
Project Location



S.R. 120

STATE HIGHWAY 120



**Legend**  
: 24-hour Noise Monitoring Sites

: Short-term Noise Monitoring Sites

**Figure 2**  
**Site Plan & Monitoring Locations**

**j.c. brennan & associates**  
*consultants in acoustics*

Rev. 1/11/17

## FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large range of numbers. The decibel (dB) scale is used to facilitate graphical visualization of large ranges of numbers. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a graphically practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels correspond closely to human perception of relative loudness.

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 A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels and are expressed in units of dBA, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound power levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

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 environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level ( $L_{eq}$ ), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The  $L_{eq}$  is the foundation of the composite noise descriptor,  $L_{dn}$ , and shows very good correlation with community response to noise.

The day/night average level ( $L_{dn}$ ) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise

## NOISE AND VIBRATION

exposures as though they were twice as loud as daytime exposures. Because  $L_{dn}$  represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to  $L_{dn}$ , but includes a +5 dBA penalty for evening noise. Typically CNEL and  $L_{dn}$  values are within 0.5 dBA of each other and are often considered to be synonymous. Table 1 lists several examples of the noise levels associated with common situations.

<b>TABLE 1 : TYPICAL NOISE LEVELS</b>		
COMMON OUTDOOR ACTIVITIES	NOISE LEVEL (dBA)	COMMON INDOOR ACTIVITIES
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. NOVEMBER 2009.

## EFFECTS OF NOISE ON PEOPLE

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The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dBA per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

## EXISTING NOISE LEVELS

### Traffic Noise Levels

The FHWA Highway Traffic Noise Prediction Model (FHWA-RD 77-108) was used to develop  $L_{dn}$  (24-hour average) noise contours for the primary project-area roadways. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. To predict  $L_{dn}$  values, it is necessary to determine the hourly distribution of traffic for a typical 24-hour period.

Existing traffic volumes were obtained from the traffic consultant (Fehr & Peers , February 21, 2019), and from Caltrans traffic counts. Day/night traffic distributions were based upon file data for similar roadways and field-measured values where available. Using these data sources and the FHWA traffic noise prediction methodology, traffic noise levels were calculated for existing conditions. Table 2 shows the results of this analysis. Appendix A provides the complete inputs and results for the FHWA modeling.

Traffic noise levels are predicted at 75 feet from the centerline of the roadway and at the sensitive receptors at the project site. In some locations sensitive receptors in the vicinity of the project site may be located at distances which vary from the assumed calculation distance of 75 feet and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report.

<b>TABLE 2: PREDICTED EXISTING TRAFFIC NOISE LEVELS</b>					
ROADWAY	SEGMENT	NOISE LEVEL AT 75 FEET (LDN/CNEL)	DISTANCES TO TRAFFIC NOISE CONTOURS, LDN/CNEL (FEET)		
			70 dBA	65 dBA	60 dBA
Atherton Drive	West of Lakeside Avenue	63 dB	27	58	124
Atherton Drive	West of Valencia Place	63 dB	27	57	123
Atherton Drive	East of Valencia Place	63 dB	25	54	117
S.R. 120	At Project Site	80 dB	345	744	1603

NOTES: DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS AND J.C. BRENNAN & ASSOCIATES, INC. 2019.



The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, grade, shielding from local topography or structures, elevated roadways, or elevated receivers. The distances reported in Table 2 are generally considered to be conservative estimates of noise exposure along the project-area roadways.

## COMMUNITY NOISE SURVEY

A community noise survey was conducted to document existing ambient noise levels at the project site on February 20 and 21, 2019. The data collected included the hourly average (Leq), median (L50), and the maximum level (Lmax) during the measurement period. Noise monitoring sites and the measured noise levels at each site are summarized in Table 3. Figure 2 shows the locations of the noise monitoring sites.

Community noise monitoring equipment included a Larson Davis Laboratories (LDL) Model 820 and Model 824 precision integrating sound level meters equipped with an LDL ½" microphone. The measurement systems were calibrated using a LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

Appendix B provides the complete noise monitoring results.

TABLE 3: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA								
SITE	LOCATION	CNEL/L <sub>DN</sub>	AVERAGE MEASURED HOURLY NOISE LEVELS, dBA					
			DAYTIME (7AM-10PM)			NIGHTTIME (10PM-7AM)		
			L <sub>EQ</sub>	L <sub>50</sub>	L <sub>MAX</sub>	L <sub>EQ</sub>	L <sub>50</sub>	L <sub>MAX</sub>
Continuous (24-hour) Noise Level Measurements								
A	North Property Line	80.0 dB	74.5	67.9	85.0	73.4	71.0	84.4
B	South Property line	64.2 dB	58.6	57.8	69.3	57.6	56.8	66.7
Short-Term Noise Level Measurements								
1	300-feet from Bass Pro Shop Loading Dock	--	60.6	60.1	69.1	Loading bay is active. 2 semi-trucks and UPS Delivery. Mostly S.R. 120 traffic.		
2	100-feet from Atherton Road Centerline	--	59.2	55.5	74.1	Mostly Highway 120 traffic. Some traffic from Atherton		

NOTE: SOURCE: J.C. BRENNAN & ASSOCIATES, INC., 2017.

Based upon the measured background noise levels, the following observations are provided:

- The project is currently exposed to traffic noise levels which exceed the City standards;
- The commercial development to west which includes the Bass Pro loading dock. However, the noise environment is dominated by S.R. 120 traffic.

### REGULATORY FRAMEWORK

#### STATE

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##### **Governor's Office of Planning and Research (OPR)**

The *State of California General Plan Guidelines* (State of California 1998), published by OPR provides guidance for the acceptability of projects within specific CNEL contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

#### CITY OF MANTECA

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##### **The City of Manteca General Plan**

The City of Manteca General Plan Noise Element contains goals, policies, and implementation measures for assessing noise impacts within the City. Listed below are the noise goals, policies, and implementation measures that are applicable to the proposed project (City of Manteca General Plan, 2003):

##### **Goals**

- N-1. Protect the residents of Manteca from the harmful and annoying effects of exposure to excessive noise.
- N-3. Ensure that the downtown core noise levels remain acceptable and compatible with commercial and higher density residential land uses.
- N-4. Protect public health and welfare by eliminating existing noise problems where feasible, by establishing standards for acceptable indoor and outdoor noise, and by preventing significant increases in noise levels.
- N-5. Incorporate noise considerations into land use planning decisions, and guide the location and design of transportation facilities to minimize the effects of noise on adjacent land uses.

##### **Policies**

N-P-2: New development of residential or other noise-sensitive land uses will not be permitted in noise-impacted areas unless effective mitigation measures are incorporated into the project design to satisfy the performance standards in Table 9-1 (Table 4 of this report).

N-P-3: The City may permit the development of new noise-sensitive uses only where the noise level due to fixed (non-transportation) noise sources satisfies the noise level standards of Table 9-2. Noise mitigation may be required to meet Table 9-2 performance standards (Table 5 of this report).

N-P-5: In accord with the Table 9-2 standards, the City shall regulate construction-related noise impacts on adjacent uses.

## Implementation Measures

N-I-1. New development in residential areas with an actual or projected exterior noise level of greater than 60 dB Ldn will be conditioned to use mitigation measures to reduce exterior noise levels to less than or equal to 60 dB Ldn.

N-I-3. In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels are increased by 10 dB or more. An increase from 5-10 dB may be substantial. Factors to be considered in determining the significance of increases from 5-10 dB include:

- the resulting noise levels
- the duration and frequency of the noise
- the number of people affected
- the land use designation of the affected receptor sites
- public reactions or controversy as demonstrated at workshops or hearings, or by correspondence
- prior CEQA determinations by other agencies specific to the project

N-I-4. Control noise at the source through use of insulation, berms, building design and orientation, buffer space, staggered operating hours and other techniques. Use noise barriers to attenuate noise to acceptable levels.

**Table 4**

MAXIMUM ALLOWABLE NOISE EXPOSURE MOBILE NOISE SOURCES			
Land Use <sup>1</sup>	Outdoor Activity Areas <sup>1</sup>	Interior Spaces	
		Ldn/CNEL, dB	Leq, dB <sup>3</sup>
Residential	60 <sup>2</sup>	45	
Transient Lodging	60 <sup>2</sup>	45	
Hospitals, Nursing Homes	60 <sup>2</sup>	45	
Theaters, Auditoriums, Music Halls			35
Churches, Music Halls	60 <sup>2</sup>		40
Office Buildings	65		45
Schools, Libraries, Museums			45
Playgrounds, Neighborhood Parks	70		

<sup>1</sup>Outdoor activity areas for residential development are considered to be backyard patios or decks of single family dwellings, and the common areas where people generally congregate for multi-family developments. Outdoor activity areas for non-residential developments are considered to be those common areas where people generally congregate, including pedestrian plazas, seating areas, and outside lunch facilities. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

<sup>2</sup>In areas where it is not possible to reduce exterior noise levels to 60 dB L<sub>dn</sub> or below using a practical application of the best noise-reduction technology, an exterior noise level of up to 65 L<sub>dn</sub> will be allowed.

<sup>3</sup>Determined for a typical worst-case hour during periods of use.

<sup>4</sup>Where a proposed use is not specifically listed on the table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the City.

**Table 9-1 of the City of Manteca General Plan Noise Element**

**Table 5**

PERFORMANCE STANDARDS FOR STATIONARY NOISE SOURCES OR PROJECTS AFFECTED BY STATIONARY NOISE SOURCES <sup>1,2</sup>		
Noise Level Descriptor	Daytime	Nighttime
	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.
Hourly Leq, dB	50	45
Maximum Level, dB	70	65

<sup>1</sup> Each of the noise levels specified above should be lowered by five (5) dB for simple noise tones, noises consisting primarily of speech or music, or recurring impulsive noises. Such noises are generally considered by residents to be particularly annoying and are a primary source of noise complaints.

<sup>2</sup> No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.

**Table 9-2 of the City of Manteca General Plan Noise Element**

## City of Manteca Municipal Code Noise Ordinance

Section 9.52.030 of the City of Manteca Municipal Code prohibits excessive or annoying noise or vibration to residential and commercial properties in the City. The following general rules are outline in the ordinance:

### 9.52.030 PROHIBITED NOISES—GENERAL STANDARD

No person shall make, or cause to suffer, or permit to be made upon any public property, public right-of-way or private property, any unnecessary and unreasonable noises, sounds or vibrations which are physically annoying to reasonable persons of ordinary sensitivity or which are so harsh or so prolonged or unnatural or unusual in their use, time or place as to cause or contribute to the unnecessary and unreasonable discomfort of any persons within the neighborhood from which said noises emanate or which interfere with the peace and comfort of residents or their guests, or the operators or customers in places of business in the vicinity, or which may detrimentally or adversely affect such residences or places of business. (Ord. 1374 § 1(part), 2007)

### 17.58.050 D. EXEMPT ACTIVITIES

8. Construction activities when conducted as part of an approved Building Permit, except as prohibited in Subsection **17.58.050(E)(1)** (Prohibited Activities) below.

### 17.58.050 E. PROHIBITED ACTIVITIES

1. Construction Noise. Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work daily between the hours of 7:00 p.m. and 7:00 a.m., so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

### IMPACTS AND MITIGATION MEASURES THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the project will have a significant impact related to noise if it will result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without project;
- 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, expose people residing or working in the project area to excessive noise levels within two miles of a public airport or public use airport; or
- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

#### **Noise Standards**

The noise standards applicable to the project include the relevant portions of the City of Manteca General Plan and Municipal Code as described in the Regulatory Framework section above, and the following standards.

#### **Vibration Standards**

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

## NOISE AND VIBRATION

The City of Manteca does not have specific policies pertaining to vibration levels during construction. However, vibration levels associated with construction activities are addressed as potential noise impacts associated with project implementation.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 6 indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). The general threshold at which human annoyance could occur is notes as 0.1 in/sec p.p.v.

<b>TABLE 6: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS</b>			
PEAK PARTICLE VELOCITY MM/SECOND	PEAK PARTICLE VELOCITY IN/SECOND	HUMAN REACTION	EFFECT ON BUILDINGS
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings  Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORE VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

### IMPACT 1: EXPOSURE OF PERSONS TO, OR GENERATION OF NOISE LEVELS IN EXCESS OF APPLICABLE STANDARDS OR A SUBSTANTIAL PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN THE PROJECT VICINITY ABOVE LEVELS EXISTING WITHOUT THE PROJECT - TRAFFIC NOISE AT EXISTING RECEPTORS (LESS THAN SIGNIFICANT)

To describe future noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Inputs to the model included traffic volumes provided by Fehr & Peers. The FHWA model is based upon the Calvenio reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly  $L_{eq}$  values for free-flowing traffic conditions. To predict Ldn/CNEL values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

California Environmental Quality Act (CEQA) guidelines define a significant impact of a project if it “increases substantially the ambient noise levels for adjoining areas”.

The City of Manteca General Plan Noise Element Implementation Measure N-I-3 provides specific guidance for assessing increases in ambient noise, as follows:

*In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels are increased by 10 dB or more. An increase from 5-10 dB may be substantial. Factors to be considered in determining the significance of increases from 5-10 dB include:*

- *the resulting noise levels*
- *the duration and frequency of the noise*
- *the number of people affected*
- *the land use designation of the affected receptor sites*
- *public reactions or controversy as demonstrated at workshops or hearings, or by correspondence*
- *prior CEQA determinations by other agencies specific to the project*

Based upon Tables 7 and 8, the related noise level increases due to the proposed project are predicted to be no more than 1 to 2 dBA along the local roadway network. This is less than the City’s substantial increase criteria of 5-10 dB.

**It is important to note that the predicted noise levels, at the project site, shown in Table 7 do not include shielding from existing buildings and residential areas**



**TABLE 7: EXISTING TRAFFIC NOISE LEVELS VS. EXISTING PLUS PROJECT TRAFFIC NOISE LEVELS**

ROADWAY	SEGMENT	NOISE LEVELS (CNEL/LDN, dBA) @ 75 FEET			DISTANCE TO EXISTING + PROJECT TRAFFIC NOISE CONTOURS, FEET <sup>1</sup>		
		EXISTING	EXISTING + PROJECT	CHANGE (dBA)			
					70 dBA LDN	65 dBA LDN	60 dBA LDN
Atherton Drive	West of Lakeside Avenue	63 dB	65 dB	+2 dB	34	72	156
Atherton Drive	West of Valencia Place	63 dB	64 dB	+1 dB	32	69	149
Atherton Drive	East of Valencia Place	63 dB	64 dB	+1 dB	29	61	132
S.R. 120	At Project Site	80 dB	80 dB	0 dB	345	744	1603

NOTES: 1 DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS. ACTUAL DISTANCES MAY VARY DUE TO SHIELDING FROM EXISTING NOISE BARRIERS OR INTERVENING STRUCTURES. TRAFFIC NOISE LEVELS MAY VARY DEPENDING ON ACTUAL SETBACK DISTANCES AND LOCALIZED SHIELDING.

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS AND J.C. BRENNAN & ASSOCIATES, INC. 2019.

**TABLE 8: CUMULATIVE TRAFFIC NOISE LEVELS VS. CUMULATIVE PLUS PROJECT TRAFFIC NOISE LEVELS**

ROADWAY	SEGMENT	NOISE LEVELS (CNEL/LDN, dBA) @ 75 FEET			DISTANCE TO CUMULATIVE + PROJECT TRAFFIC NOISE CONTOURS, FEET <sup>1</sup>		
		CUMULATIVE	CUMULATIVE + PROJECT	CHANGE (dBA)			
					70 dBA LDN	65 dBA LDN	60 dBA LDN
Atherton Drive	West of Lakeside Avenue	66 dB	67 dB	+1 dB	44	95	206
Atherton Drive	West of Valencia Place	66 dB	67 dB	+1 dB	44	95	205
Atherton Drive	East of Valencia Place	65 dB	66 dB	+1 dB	39	85	183
S.R. 120	At Project Site	81 dB	81 dB	0 dB	411	886	1908

NOTES: 1 DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS. ACTUAL DISTANCES MAY VARY DUE TO SHIELDING FROM EXISTING NOISE BARRIERS OR INTERVENING STRUCTURES. TRAFFIC NOISE LEVELS MAY VARY DEPENDING ON ACTUAL SETBACK DISTANCES AND LOCALIZED SHIELDING.

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS AND J.C. BRENNAN & ASSOCIATES, INC. 2019.

## IMPACT 2: POTENTIAL TO EXPOSE PERSONS TO, OR GENERATE NOISE LEVELS IN EXCESS OF APPLICABLE STANDARDS OR TO RESULT IN A SUBSTANTIAL TEMPORARY OR PERIODIC INCREASE IN AMBIENT NOISE LEVELS IN THE PROJECT VICINITY ABOVE LEVELS EXISTING WITHOUT PROJECT - CONSTRUCTION NOISE (POTENTIALLY SIGNIFICANT)

The new development, maintenance of roadways, installation of public utilities, and infrastructure improvements associated with the project will require construction activities. These activities include the use of heavy equipment and impact tools. Table 9 provides a list of the types of equipment which may be associated with construction activities and the associated noise levels.

**TABLE 9: CONSTRUCTION EQUIPMENT NOISE**

TYPE OF EQUIPMENT	PREDICTED NOISE LEVELS, L <sub>MAX</sub> dBA				DISTANCES TO NOISE CONTOURS (FEET)	
	NOISE LEVEL AT 50'	NOISE LEVEL AT 100'	NOISE LEVEL AT 200'	NOISE LEVEL AT 400'	70 dBA L <sub>MAX</sub> CONTOUR	65 dBA L <sub>MAX</sub> CONTOUR
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006. J.C. BRENNAN & ASSOCIATES, INC. 2013.

Activities involved in project construction would typically generate maximum noise levels ranging from 85 to 90 dBA at a distance of 50 feet. The nearest residential receptors would be located a minimum of 350-feet or more from the majority of project construction activities.

At this distance, construction related activities are predicted to generate maximum noise levels ranging between 61-73 dB L<sub>max</sub>. Based upon the daytime maximum noise levels of 63-81 dB L<sub>max</sub>, maximum noise levels due to project construction are predicted to be within the range or less than existing maximum noise levels at the nearest sensitive receptors.

Construction could result in periods of elevated ambient noise levels and the potential for annoyance. However, predicted maximum noise levels associated with project construction are predicted to be less than existing average maximum (L<sub>max</sub>) noise levels, as measured at the nearest sensitive receptors. The City of Manteca General Plan establishes allowable hours of operation and noise limits for construction activities as follows:

### 17.58.050 D Exempt Activities

8. Construction activities when conducted as part of an approved Building Permit, except as prohibited in Subsection 17.58.050(E)(1) (Prohibited Activities) below.

### 17.58.050 E. Prohibited Activities

1. Construction Noise. Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work daily between the hours of 7:00 p.m. and 7:00 a.m., so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

Maximum ( $L_{max}$ ) construction related noise levels are predicted to be less than existing maximum noise levels at the nearest sensitive receptors. Additionally, all construction activities will be subject to the requirements of the City of Manteca Noise Ordinance with respect to limits on construction noise. Implementation of the proposed project would have a **less than significant** impact relative to this topic.

### IMPACT 3: EXPOSURE OF PERSONS TO OR GENERATION OF EXCESSIVE GROUNDBORNE VIBRATION OR GROUNDBORNE NOISE LEVELS (LESS THAN SIGNIFICANT)

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The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utilities placement, and roadway construction occur. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located approximately 25-50 feet or further from the project site. At this distance construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

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. Table 10 shows the typical vibration levels produced by construction equipment.

**Table 10: Vibration Levels for Varying Construction Equipment**

TYPE OF EQUIPMENT	PEAK PARTICLE VELOCITY @ 25 FEET (INCHES/SECOND)	PEAK PARTICLE VELOCITY @ 50 FEET (INCHES/SECOND)	PEAK PARTICLE VELOCITY @ 100 FEET (INCHES/SECOND)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210 (<0.200 @ 26')	0.074	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

The Table 10 data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec p.p.v. threshold of damage to buildings and less than the 0.1 in/sec threshold of annoyance criteria at distances over 25 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Therefore, this impact would be considered **less than significant**.

#### IMPACT 4: EXPOSURE OF PERSONS TO, OR GENERATION OF NOISE LEVELS IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE – TRAFFIC NOISE AT NEW RECEPTORS (POTENTIALLY SIGNIFICANT)

##### EXTERIOR TRAFFIC NOISE LEVEL IMPACTS:

Based upon Table 8, the cumulative noise levels due to S.R. 120 is 81 dB Ldn/CNEL at a distance of 75-feet from the roadway centerline. The cumulative noise levels due to Atherton Road is 67 dB Ldn/CNEL, at a distance of 75-feet from the roadway centerline. Table 11 shows the predicted traffic noise levels at the nearest residential facades, and at the proposed common outdoor areas (Community Centers). The predicted future S.R. 120 traffic noise levels shown in Table 11 are applied at the Phase 1 portion of the project site. The predicted future Atherton Road traffic noise levels shown in Table 11 are applied at the Phase 2 portion of the project site.

Based upon Table 9-1 of the City of Manteca General Plan Noise Element (Table 4 of this report), the lower level noise level standard of 60 dB Ldn/CNEL for multi-family developments is applied at the common area where people generally congregate. The Table also states the following:

*In areas where it is not possible to reduce exterior noise levels to 60 dB Ldn or below using a practical application of the best noise-reduction technology, an exterior noise level of up to 65 dB Ldn will be allowed.*

**Table 11: Predicted Cumulative Traffic Noise Levels at the Project Site Noise-Sensitive Areas**

ROADWAY	NOISE LEVEL AT NEAREST BUILDING FACADES	NOISE LEVEL AT THE COMMUNITY CENTERS
S.R. 120	(@ 225-feet) 74 dB Ldn/CNEL	(@ 535-feet)* 63 dB Ldn/CNEL
Atherton Road	(@ 90-feet) 65 dB Ldn/CNEL	(@ 345-feet)* 52 dB Ldn/CNEL
* Includes a 5 dB shielding from intervening Building Facades All distances are from the roadway centerlines		

Based upon Table 11, the predicted future traffic noise associated with S.R. 120 will exceed the lower limit exterior noise level standard of 60 dB Ldn/CNEL. The future traffic noise associated with Atherton Road will comply with the lower limit exterior noise level standard of 60 dB Ldn/CNEL.

## MITIGATION MEASURES

**Mitigation Measure 1:** *It is recommended that a barrier of a minimum height of 10-feet is constructed along the S.R 120 ROW adjacent to the project site, which is consistent with barrier heights for other projects in the area. A barrier analysis (Appendix A) indicates that a sound barrier located at the S.R. 120 ROW will provide the following shielding of S.R. 120 traffic noise levels at the first row of building facades, and the Common Area of Phase 1. The barrier can be constructed when Phase 2 of the project is constructed.:*

Barrier Height	Resulting S.R. 120 Traffic Noise Level	
	@ First Row of Facades	At Common Area
6-feet	68 dB Ldn/CNEL	58 dB Ldn/CNEL
7-feet	68 dB Ldn/CNEL	57 dB Ldn/CNEL
8-feet	68 dB Ldn/CNEL	57 dB Ldn/CNEL
9-feet	67 dB Ldn/CNEL	57 dB Ldn/CNEL
10-feet	67 dB Ldn/CNEL	57 dB Ldn/CNEL
11-feet	66 dB Ldn/CNEL	56 dB Ldn/CNEL
12-feet	65 dB Ldn/CNEL	55 dB Ldn/CNEL

Source: j.c. brennan & associates, 2019

#### INTERIOR TRAFFIC NOISE LEVEL IMPACTS:

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB  $L_{dn}$ , or less, will typically comply with the City of Manteca 45 dB  $L_{dn}$  interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB  $L_{dn}$ .

It should be noted that exterior noise levels are typically 2-3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed project site is predicted to be exposed to mitigated first floor exterior S.R. 120 traffic noise levels which are less than 70 dB  $L_{dn}$ . However, the second floor facades will be exposed to S.R. 120 exterior noise levels of approximately 76 dB  $L_{dn}$ . Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels at first floor facades will comply with the interior noise level standard of 45 dB  $L_{dn}$ . The second floor facades are predicted to be exposed to S.R. 120 traffic noise levels of up to 51 dB  $L_{dn}$ . These noise levels would exceed the City of Manteca 45 dB  $L_{dn}$  interior noise level standard for residential uses. In order to achieve compliance with the 45 dB  $L_{dn}$  interior noise level standard, interior noise control measures would be required. This would include the use of sound transmission class (STC) 38 rated window assemblies in second floor facades parallel and perpendicular to S.R. 120, located within 450-feet of the centerline of SR 120.

The following mitigation measures will minimize noise impacts resulting from transportation noise impacts on the proposed project site. Implementation of this mitigation measure would ensure consistency with the City's noise standards and would reduce this potentially significant impact to a **less than significant** level.

#### MITIGATION MEASURES

**Mitigation Measure 2:** *All parallel and perpendicular second floor building facades located within 450 feet of the centerline of SR 120 shall have a minimum sound transmission class (STC) rating of 38. In addition, these facades shall have a minimum of a 3-coat stucco exterior, and interior gypsum board installed over resilient channels (RC's). As an alternative to this requirement, the applicant may submit a detailed interior noise analysis outlining alternative noise control measures that would ensure compliance with the City of Manteca 45 dB  $L_{dn}$  interior noise level standard. This analysis should specify required sound ratings for glazing as well as any other modifications to be the building envelope used to meet the City's interior noise level standard. This analysis shall be prepared by a qualified acoustical consultant.*

### IMPACT 5: EXPOSURE OF PERSONS TO, OR GENERATION OF NOISE LEVELS IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE – STATIONARY NOISE AT NEW RECEPTORS (LESS THAN SIGNIFICANT)

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#### COMMERCIAL USE NOISE LEVEL IMPACTS:

Based upon Table 3, the noise levels on the project site are dominated by traffic on S.R. 120 and Atherton Road. The commercial center to the west does contain noise sources which contribute to the audible noise on the project site. Once a sound wall is installed along The S.R. 120 ROW, the noise from the commercial center may become more noticeable. Based upon the distance from the project site to the loading dock of the Bass Pro Shop, the noise levels associated with the loading dock are not expected to exceed existing background noise levels or the City standards.



**Appendix A****FHWA-RD-77-108 Highway Traffic Noise Prediction Model****Data Input Sheet**

Project #: 2019-105

Description: Valencia Apts Existing and Existing + Project

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Atherton Drive	West of Lakeside	5,363	75		25	2	1	45	75	
2	Atherton Drive	West of Valencia Place	5,277	75		25	2	1	45	75	
3	Atherton Drive	East of Valencia Place	4,876	75		25	2	1	45	75	
4	SR 120	At Project Site	77,000	68		32	1	5	60	75	
5											
6	Atherton Drive	West of Lakeside	7,493	75		25	2	1	45	75	
7	Atherton Drive	West of Valencia Place	7,049	75		25	2	1	45	75	
8	Atherton Drive	East of Valencia Place	5,879	75		25	2	1	45	75	
9	SR 120	At Project Site	77,000	68		32	1	5	60	75	
10											
11											
12											
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**Appendix A****FHWA-RD-77-108 Highway Traffic Noise Prediction Model****Predicted Levels**

Project #: 2019-105  
Description: Valencia Apts Existing and Existing + Project  
Ldn/CNEL: Ldn  
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Atherton Drive	West of Lakeside	62.1	53.4	54.9	63
2	Atherton Drive	West of Valencia Place	62.0	53.4	54.9	63
3	Atherton Drive	East of Valencia Place	61.6	53.0	54.5	63
4	SR 120	At Project Site	77.9	64.7	75.4	80
6	Atherton Drive	West of Lakeside	63.5	54.9	56.4	65
7	Atherton Drive	West of Valencia Place	63.2	54.6	56.1	64
8	Atherton Drive	East of Valencia Place	62.5	53.8	55.3	64
9	SR 120	At Project Site	77.9	64.7	75.4	80

## Appendix A

### FHWA-RD-77-108 Highway Traffic Noise Prediction Model

#### Noise Contour Output

Project #: 2019-105

Description: Valencia Apts Existing and Existing + Project

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	----- Distances to Traffic Noise Contours -----				
			75	70	65	60	55
1	Atherton Drive	West of Lakeside	12	27	58	124	268
2	Atherton Drive	West of Valencia Place	12	27	57	123	265
3	Atherton Drive	East of Valencia Place	12	25	54	117	252
4	SR 120	At Project Site	160	345	744	1603	3454
6	Atherton Drive	West of Lakeside	16	34	72	156	335
7	Atherton Drive	West of Valencia Place	15	32	69	149	322
8	Atherton Drive	East of Valencia Place	13	29	61	132	285
9	SR 120	At Project Site	160	345	744	1603	3454

**Appendix A****FHWA-RD-77-108 Highway Traffic Noise Prediction Model****Data Input Sheet**

Project #: 2019-105

Description: Valencia Apts Cumulative and Cumulative + Project

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Atherton Drive	West of Lakeside	9,250	75		25	2	1	45	75	
2	Atherton Drive	West of Valencia Place	9,071	75		25	2	1	45	75	
3	Atherton Drive	East of Valencia Place	8,533	75		25	2	1	45	75	
4	SR 120	At Project Site	100,000	68		32	1	5	60	75	
5											
6	Atherton Drive	West of Lakeside	11,380	75		25	2	1	45	75	
7	Atherton Drive	West of Valencia Place	11,366	75		25	2	1	45	75	
8	Atherton Drive	East of Valencia Place	9,538	75		25	2	1	45	75	
9	SR 120	At Project Site	100,000	68		32	1	5	60	75	
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

**Appendix A****FHWA-RD-77-108 Highway Traffic Noise Prediction Model****Predicted Levels**

Project #: 2019-105

Description: Valencia Apts Cumulative and Cumulative + Project

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Atherton Drive	West of Lakeside	64.4	55.8	57.3	66
2	Atherton Drive	West of Valencia Place	64.3	55.7	57.2	66
3	Atherton Drive	East of Valencia Place	64.1	55.5	57.0	65
4	SR 120	At Project Site	79.0	65.9	76.5	81
6	Atherton Drive	West of Lakeside	65.3	56.7	58.2	67
7	Atherton Drive	West of Valencia Place	65.3	56.7	58.2	67
8	Atherton Drive	East of Valencia Place	64.6	55.9	57.4	66
9	SR 120	At Project Site	79.0	65.9	76.5	81

## Appendix A

### FHWA-RD-77-108 Highway Traffic Noise Prediction Model

#### Noise Contour Output

Project #: 2019-105

Description: Valencia Apts Cumulative and Cumulative + Project

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	----- Distances to Traffic Noise Contours -----				
			75	70	65	60	55
1	Atherton Drive	West of Lakeside	18	39	83	179	386
2	Atherton Drive	West of Valencia Place	18	38	82	177	381
3	Atherton Drive	East of Valencia Place	17	37	79	170	366
4	SR 120	At Project Site	191	411	886	1908	4112
6	Atherton Drive	West of Lakeside	21	44	95	206	443
7	Atherton Drive	West of Valencia Place	21	44	95	205	443
8	Atherton Drive	East of Valencia Place	18	39	85	183	394
9	SR 120	At Project Site	191	411	886	1908	4112

## Appendix D

### FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)

#### Noise Barrier Effectiveness Prediction Worksheet

##### Project Information:

Job Number: 2019-105  
 Description: Barrier Calculations  
 Roadway Name: SR 120  
 Location(s): 1

##### Noise Level Data:

Year: 2025  
 Auto  $L_{dn}$ , dB: 72  
 Medium Truck  $L_{dn}$ , dB: 59  
 Heavy Truck  $L_{dn}$ , dB: 69

##### Site Geometry:

Receiver Description: At Nearest Façade  
 Centerline to Barrier Distance ( $C_1$ ): 135  
 Barrier to Receiver Distance ( $C_2$ ): 90  
 Automobile Elevation: 0  
 Medium Truck Elevation: 2  
 Heavy Truck Elevation: 8  
 Pad/Ground Elevation at Receiver: 0  
 Receiver Elevation<sup>1</sup>: 5  
 Base of Barrier Elevation: 0  
 Starting Barrier Height: 6

##### Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height <sup>2</sup> (ft)	----- $L_{dn}$ , dB -----				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	66	53	64	<b>68</b>	Yes	Yes	No
7	7	65	53	64	<b>68</b>	Yes	Yes	Yes
8	8	65	52	64	<b>68</b>	Yes	Yes	Yes
9	9	64	52	64	<b>67</b>	Yes	Yes	Yes
10	10	64	51	63	<b>67</b>	Yes	Yes	Yes
11	11	63	50	63	<b>66</b>	Yes	Yes	Yes
12	12	62	50	62	<b>65</b>	Yes	Yes	Yes
13	13	62	49	61	<b>65</b>	Yes	Yes	Yes
14	14	62	49	61	<b>64</b>	Yes	Yes	Yes

**Notes:** 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)



## Appendix D

### FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)

#### Noise Barrier Effectiveness Prediction Worksheet

##### Project Information:

Job Number: 2019-105  
 Description: Barrier Calculations  
 Roadway Name: SR 120  
 Location(s): 2

##### Noise Level Data:

Year: 2025  
 Auto  $L_{dn}$ , dB: 61  
 Medium Truck  $L_{dn}$ , dB: 48  
 Heavy Truck  $L_{dn}$ , dB: 59

##### Site Geometry:

Receiver Description: At Outdoor Area  
 Centerline to Barrier Distance ( $C_1$ ): 135  
 Barrier to Receiver Distance ( $C_2$ ): 400  
 Automobile Elevation: 0  
 Medium Truck Elevation: 2  
 Heavy Truck Elevation: 8  
 Pad/Ground Elevation at Receiver: 0  
 Receiver Elevation<sup>1</sup>: 5  
 Base of Barrier Elevation: 0  
 Starting Barrier Height: 6

##### Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height <sup>2</sup> (ft)	----- $L_{dn}$ , dB -----				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	55	43	54	<b>58</b>	Yes	Yes	No
7	7	55	42	54	<b>57</b>	Yes	Yes	No
8	8	54	42	54	<b>57</b>	Yes	Yes	Yes
9	9	54	41	54	<b>57</b>	Yes	Yes	Yes
10	10	53	41	53	<b>57</b>	Yes	Yes	Yes
11	11	53	40	53	<b>56</b>	Yes	Yes	Yes
12	12	52	40	53	<b>56</b>	Yes	Yes	Yes
13	13	52	40	52	<b>55</b>	Yes	Yes	Yes
14	14	52	39	52	<b>55</b>	Yes	Yes	Yes

**Notes:** 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

**Appendix B**

2019-105 Valencia Apts

24hr Continuous Noise Monitoring - Site A

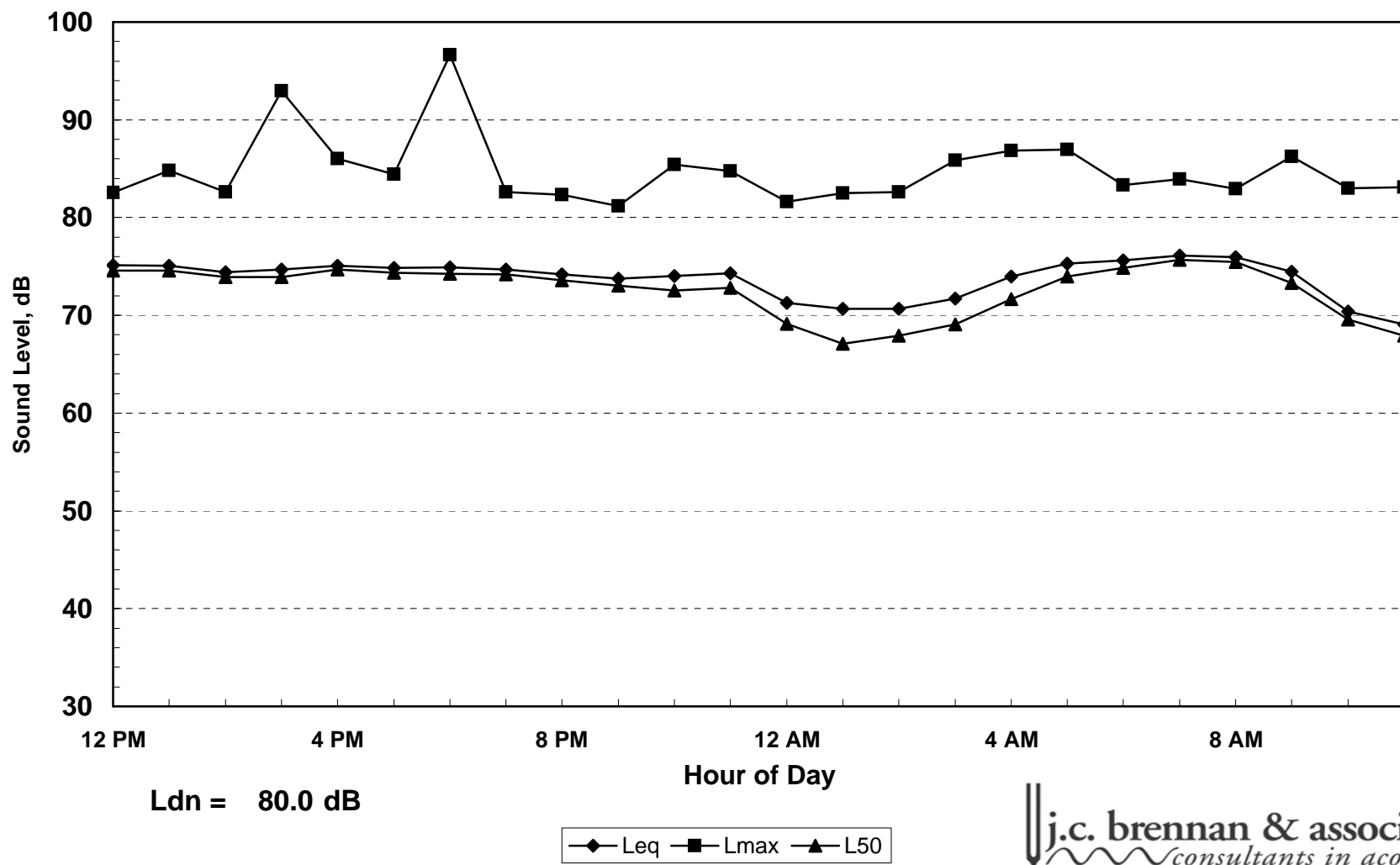
02/20/2019 - 02/21/2019

Hour	Leq	Lmax	L50	L90
12:00	75	83	75	70
13:00	75	85	75	71
14:00	74	83	74	71
15:00	75	93	74	71
16:00	75	86	75	72
17:00	75	84	74	71
18:00	75	97	74	70
19:00	75	83	74	69
20:00	74	82	74	67
21:00	74	81	73	66
22:00	74	85	73	65
23:00	74	85	73	63
0:00	71	82	69	59
1:00	71	82	67	58
2:00	71	83	68	61
3:00	72	86	69	65
4:00	74	87	72	66
5:00	75	87	74	68
6:00	76	83	75	69
7:00	76	84	76	71
8:00	76	83	75	72
9:00	74	86	73	68
10:00	70	83	70	67
11:00	69	83	68	65

Statistical Summary						
Daytime (7 a.m. - 10 p.m.)				Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	76.1	69.1	74.5	75.6	70.7	73.4
Lmax (Maximum)	96.7	81.2	85.0	87.0	81.6	84.4
L50 (Median)	75.7	67.9	73.5	74.8	67.1	71.0
L90 (Background)	71.8	65.3	69.3	68.7	58.3	63.8

Computed Ldn, dB	80.0
% Daytime Energy	68%
% Nighttime Energy	32%

**Appendix B**  
2019-105 Valencia Apts  
24hr Continuous Noise Monitoring - Site A  
02/20/2019 - 02/21/2019



**Appendix B**

2019-105 Valencia Apts

24hr Continuous Noise Monitoring - Site B

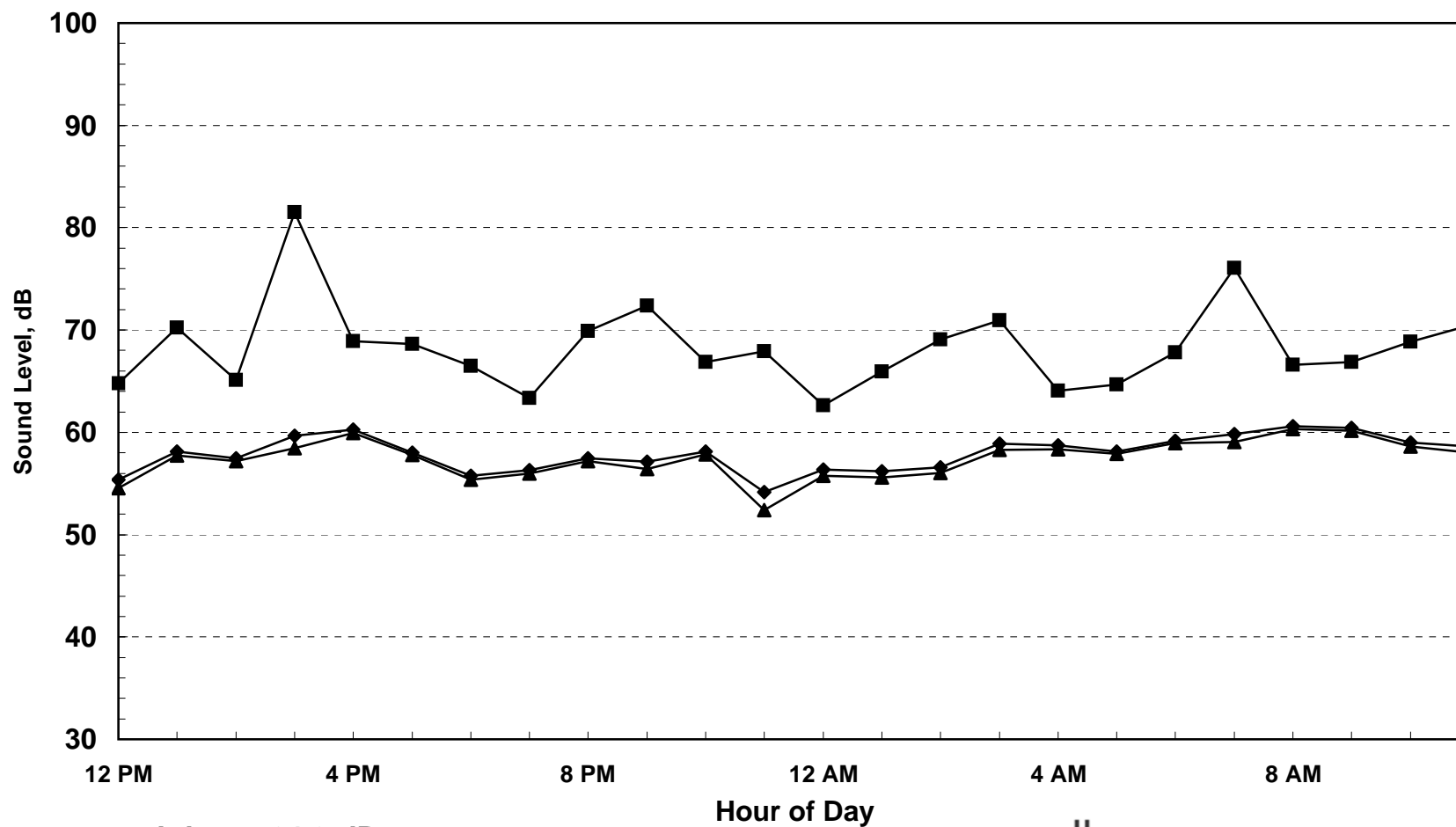
02/20/2019 - 02/21/2019

Hour	Leq	Lmax	L50	L90
12:00	55	65	55	52
13:00	58	70	58	55
14:00	57	65	57	55
15:00	60	82	58	56
16:00	60	69	60	58
17:00	58	69	58	56
18:00	56	67	55	53
19:00	56	63	56	54
20:00	57	70	57	56
21:00	57	72	56	54
22:00	58	67	58	55
23:00	54	68	52	48
0:00	56	63	56	53
1:00	56	66	56	52
2:00	57	69	56	52
3:00	59	71	58	56
4:00	59	64	58	56
5:00	58	65	58	56
6:00	59	68	59	57
7:00	60	76	59	57
8:00	61	67	60	58
9:00	60	67	60	58
10:00	59	69	59	57
11:00	59	70	58	56

Statistical Summary						
Daytime (7 a.m. - 10 p.m.)				Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	60.6	55.4	58.6	59.2	54.2	57.6
Lmax (Maximum)	81.5	63.4	69.3	70.9	62.6	66.7
L50 (Median)	60.3	54.6	57.8	58.9	52.4	56.8
L90 (Background)	58.5	51.8	55.8	56.9	48.4	54.0

Computed Ldn, dB	64.2
% Daytime Energy	67%
% Nighttime Energy	33%

**Appendix B**  
2019-105 Valencia Apts  
24hr Continuous Noise Monitoring - Site B  
02/20/2019 - 02/21/2019



Ldn = 64.2 dB

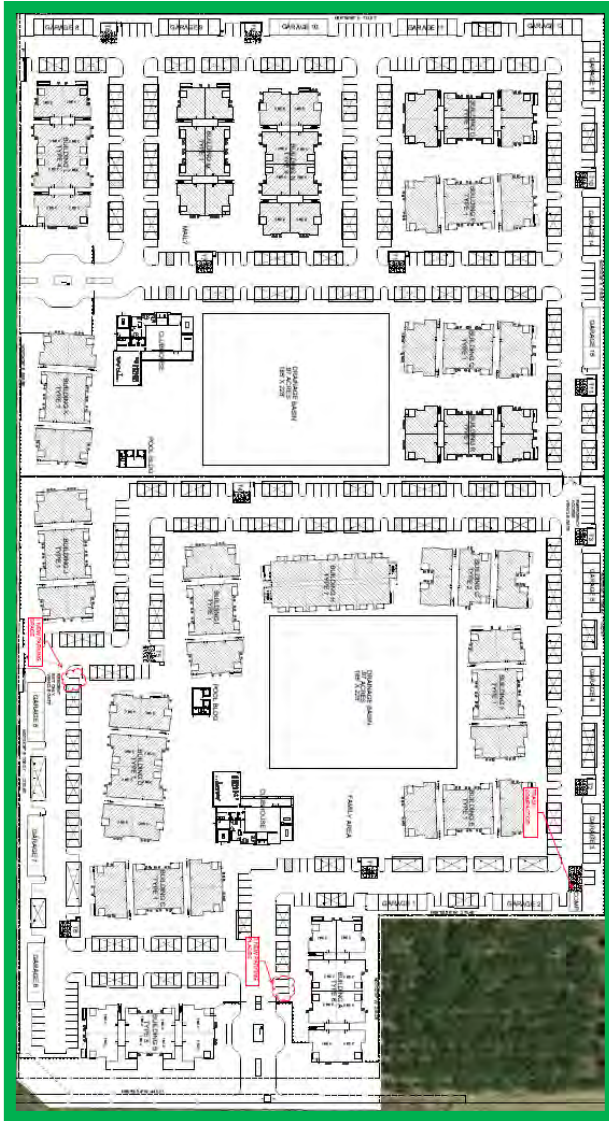
◆ Leq    ■ Lmax    ▲ L50

j.c. brennan & associates  
consultants in acoustics

# **Appendix C**

## **Transportation Impact Analysis Report**

# TRANSPORTATION IMPACT ANALYSIS REPORT



FOR THE  
  
VALENCIA PLACE  
APARTMENTS PROJECT  
AT  
ATHERTON DRIVE  
AND  
LAKESIDE AVENUE  
IN  
MANTECA, CA

This Transportation Impact Analysis Report was prepared under my direction and responsible charge. I attest to the information contained herein and have judged the qualification of any technical specialists providing engineering data upon which recommendations, conclusions, and decisions are based.

February 24, 2019

Fred Choa, P.E.  
Registered Professional Traffic Engineer  
Fehr & Peers  
RS19-3705

Date





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# 1. INTRODUCTION

This report documents the results of the Transportation Analysis Study conducted for the proposed Valencia Place Apartments Project in Manteca, California. The project site is bounded by Lakeside Avenue to the west, State Route 120 to the north and Atherton Drive to the south. As part of the proposed project, a new full access intersection will be constructed on Atherton Drive, directly across from Tinnin Road. In addition, access to the Valencia Place Apartments Project will be provided via Lakeside Drive with westbound right-turn in and southbound right-turn out at Atherton Drive.

## PROJECT DESCRIPTION

This *Transportation Impact Analysis Report* (February 2019) was prepared by Fehr & Peers for the proposed project under contract to the City of Manteca Community Development Department and DeNovo Planning Group. The Valencia Place Apartment Project would construct ninety-nine (99) single family residential units on the south-east corner of the Airport Wat / Crom Street intersection.

## STUDY INTERSECTIONS

The following four (4) study intersections were been included in the analysis:

1. Union Road / Atherton Drive (signalized);
2. Main Street / Atherton Drive (signalized);
3. Lakeside Avenue / Atherton Drive (side street stop controlled); and
4. Tinnin Road / Valencia Place / Atherton Drive (side street stop controlled).

## TRAFFIC ANALYSIS SCENARIOS

The study intersections were evaluated for the following four scenarios:

- **Scenario 1: Existing Conditions** – Level of Service (LOS) based on Existing Year 2019 AM and PM Peak Hour volumes and existing intersection configurations.
- **Scenario 2: Existing Plus Project** – Existing traffic volumes plus trips from the Proposed Valencia Place Apartment Project.
- **Scenario 3: Cumulative No Project Conditions** – This scenario includes cumulative volumes based on the City of Manteca / San Joaquin Council of Governments Travel Demand Forecasting (TDF) Model.
- **Scenario 4: Cumulative Plus Project Conditions** – This scenario includes cumulative volumes plus the trips from the Proposed Valencia Place Apartment Project.

## 2. ANALYSIS METHODOLOGY

This chapter describes the methods used to analyze the four (4) study intersections described above. The processes used to develop the existing traffic volumes and Cumulative Year (2042) travel demand forecasts are described in Chapter 3.

### INTERSECTION ANALYSIS

The Synchro/SimTraffic microsimulation software package (Version 10) was used to analyze the currently unsignalized intersections and potential future signalized study intersections. This analysis software program is consistent with the technical approach documented in the *Highway Capacity Manual – 6<sup>th</sup> Edition* (TRB, 2016) for calculating delay at both unsignalized and signalized intersections. It considers roadway design, intersection geometries, turn pocket storage lengths, and intersection control on intersection queuing and delays. Therefore, intersection delay/level of service results documented in the Transportation Impact Analysis Report are based on the SimTraffic results.

The following describes the specific inputs, model parameters, and other aspects of the SimTraffic modeling:

#### Existing/Planned Lane Configurations:

- The existing and planned roadway geometrics and intersection lane configurations were entered into the SimTraffic Version 10 traffic operations analysis model based on Existing 2018 field data.

#### Peak Hour Factors:

- The peak hour factor (PHF) observed in the field was determined to range from 0.92 to 0.95 during AM and PM peak hour conditions.
- It should be noted that a lower PHF of 0.92 (versus the field data collected 0.92 to 0.95 PHF) was used for the study intersections under Existing Year 2018 and Cumulative Year 2042 AM and PM peak hour conditions. This will provide an additional level of confidence (conservative) in the traffic analysis contained in this report.

These methodologies were applied using Synchro 10 to analyze all study intersections. The following describes many of the specific inputs into Synchro 10:

- Lane Configurations and Pocket Lengths: were entered into Synchro based on field work and aerial imagery measurements;

- Heavy Vehicle %:
  - HCM definition (any vehicles with more than four wheels on the ground) was used to input heavy vehicles into SimTraffic 10 software program.
  - Based on field collected traffic and vehicle classification counts, a two percent (2%) was used in the Synchro / SimTraffic 10 analysis consisting of 80% single-unit (45 feet) and 20% California Legal (69 feet).
- Pedestrians and bicyclists: observed levels were entered into Synchro 10. When none available, a conservative standard of 5 pedestrians was used to account for pedestrian activity variability.
  - Observed levels were observed to range from 1 to 4 pedestrians during weekday AM and PM peak hour conditions at the study intersections for Existing Conditions.
  - For Cumulative Year 2042 AM and PM Peak Hour Conditions, increased pedestrian activity was included for both No Project (3 to 5) and With Project (5 to 10) AM and PM Peak Hour Conditions.

### Reported Results

A signalized intersection's LOS is based on the weighted average control delay of all vehicles passing through the intersection. Delay is measured in seconds per vehicle, and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration.

For side-street control intersections, the delay and LOS is reported for the entire intersection and the minor street movement with the greatest delay. Table 1 summarizes the relationship between the delay and LOS for signalized and unsignalized intersections.

- The average delay and LOS are reported for both the critical movement and the entire intersection for unsignalized intersections.
- The average delay and LOS are reported the entire intersection for signalized intersections.

### **LEVEL OF SERVICE STANDARD**

General Plan Policy C-P-2 establishes the following City of Manteca level of service policy: To the extent feasible, the City shall strive for a vehicular LOS of D or better at all streets and intersections, except in the Downtown area where right-of-way is limited, pedestrian, bicycle, and transit mobility are most important and vehicular LOS is not a consideration.

Table 1: Intersections Level of Service (LOS) Criteria			
LOS	Description (for Signalized Intersections)	Average Delay (Seconds/Vehicle)	
		Signalized Intersections	Unsignalized Intersections
A	Operations with very low delay occurring with favorable traffic signal progression and/or short cycle lengths.	< 10.0	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0	> 10.0 to 15.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0	> 15.0 to 25.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0	> 25.0 to 35.0
E	Operations with high delay values indicating poor progression, and long cycle lengths. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to 80.0	> 35.0 to 50.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0	> 50.0

NOTE: LOS = LEVEL OF SERVICE; V/C RATIO = VOLUME-TO-CAPACITY RATIO

LOS AT SIGNALIZED INTERSECTIONS AND ROUNDABOUTS BASED ON AVERAGE DELAY FOR ALL VEHICLES. LOS AT UNSIGNALIZED INTERSECTIONS IS REPORTED FOR ENTIRE INTERSECTION AND FOR MINOR STREET MOVEMENT WITH GREATEST DELAY.

SOURCE: TRANSPORTATION RESEARCH BOARD 2016

### 3. TRAVEL DEMAND FORECASTS

This chapter describes the process used to develop traffic demand forecasts for Cumulative Year 2042 AM and PM Peak Hour Conditions.

#### CUMULATIVE MANTECA GENERAL PLAN MODEL

The Travel Demand Forecasting used the current RTP / Air Quality Model, Build-out of the Current City of Manteca General Plan, and General Plans for the surrounding communities of Lathrop, Ripon, San Joaquin County, and Stockton. The Manteca General Plan Model also included the projects identified in the City's Public Facilities Improvement Plan (PFIP) and the Regional Transportation Plan / Sustainable Communities Strategy Project List for:

- Mainline Highway Improvements (Table 6-1 from SJCOG RTP);
- Interchange Improvements (Table 6-1 from SJCOG RTP); and
- Regional Roadway Improvements (Table 6-3 from SJCOG RTP).

#### CUMULATIVE YEAR TRAVEL DEMAND FORECASTS

Using the City of Manteca / SJCOG sub-area Travel Demand Forecasting (TDF) Model, Cumulative Year 2042 traffic volume forecasts were developed for the following four (4) study intersections:

1. Union Road / Atherton Drive (signalized);
2. Main Street / Atherton Drive (signalized);
3. Lakeside Avenue / Atherton Drive (side street stop controlled); and
4. Tinnin Road / Valencia Place / Atherton Drive (side street stop controlled).

The traffic forecasting adjustment procedure known as the "difference method" was used to develop Cumulative Year 2042 AM And PM Peak Hour traffic forecasts. For a given intersection this forecasting procedure is calculated as follows for every movement at the study intersections:

$\text{Year 2042 Forecast} = \text{Existing Volume} + (\text{Year 2042 TDF Model} - \text{Base Year (2018) TDF Model})$
---



## 4. EXISTING CONDITIONS ANALYSIS

This chapter presents the transportation impact analysis results for Existing and Existing Plus Project AM and PM Peak Hour conditions. The following is a detailed description of the roadways that could be affected by the project:

- **Atherton Drive** is an east-west collector in the City of Manteca providing access from Airport Way to the west and Main Street to Woodward Avenue to the east. The existing three-legged intersection of Union Road / Atherton Drive will be improved to extend Atherton Drive to the west. With this planned improvement, Atherton Drive will provide a continuous east-west collector from McKinley Avenue to the west and Woodward Avenue to the east. In the vicinity of the project site, Atherton Drive provides two travel lanes in each direction with an AM peak hour volume of approximately 220 vehicles, a PM peak hour volume of 515 vehicles and an Average Daily Traffic volume of 5,300 vehicles.
- **Union Road** is a north-south arterial in the City of Manteca providing access from W. Ripon Road to the south and SR 120 to French Camp Road to the north. In the vicinity of the project site, Union Road provides one travel lane in each direction. North of Atherton Drive, Union Road serves an AM peak hour volume of approximately 900 vehicles, a PM peak hour volume of 1,200 vehicles and an Average Daily Traffic volume of 15,000 vehicles. South of Atherton Drive, Union Road serves an AM peak hour volume of approximately 500 vehicles, a PM peak hour volume of 600 vehicles and an Average Daily Traffic volume of 7,900 vehicles.
- **Main Street** is a north-south arterial in the City of Manteca providing access from W. Ripon Road to the south and Lathrop Road to the north. In the vicinity of the project site, Union Road provides one travel lane in each direction. North of Atherton Drive, Main Street serves an AM peak hour volume of approximately 900 vehicles, a PM peak hour volume of 1,200 vehicles and an Average Daily Traffic volume of 15,000 vehicles. South of Atherton Drive, Main Street serves an AM peak hour volume of approximately 650 vehicles, a PM peak hour volume of 860 vehicles and an Average Daily Traffic volume of 10,900 vehicles.

### EXISTING INTERSECTION LEVELS OF SERVICE

Existing traffic operations were analyzed at the four (4) existing study intersections for the two study hours. Based on the results presented in Table 2 for Existing AM and PM peak hour analysis, the two (2) signalized intersections operate at acceptable LOS B conditions during the AM peak hour. During the PM peak hour the Union Road / Atherton Drive signalized intersection operates at acceptable LOS B conditions and the Main Street / Atherton Drive signalized intersection operates at acceptable LOS C conditions.

Table 2: Peak Hour Intersection Analysis – Existing AM and PM Peak Hour Conditions					
Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
Union Road / Atherton Drive	Signal	18.4	B	23.0	C
Main Street / Atherton Drive	Signal	16.4	B	19.1	B
Lakeside Avenue / Atherton Drive	SSSC	0.7 8.8 (SB RT)	A (entire) A (SB RT)	0.1 9.1 (SB RT)	A (entire) A (SB RT)
Tinnin Road / Atherton Drive	SSSC	2.0 9.9 (NB LT)	A (entire) A (NB LT)	0.7 12.3 (NB LT)	A (entire) B (NB LT)

NOTES: LOS = LEVEL OF SERVICE. AWSC = ALL-WAY STOP CONTROL, SSSC = SIDE-STREET STOP CONTROL.

<sup>1</sup> FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES.

SOURCE: FEHR & PEERS, FEBRUARY 2019.

The unsignalized side street stop controlled intersection of Lakeside Drive / Atherton Drive operates at acceptable LOS A conditions during both AM and PM peak hours. The unsignalized side street stop controlled intersection of Tinnin Road / Atherton Drive operates at acceptable LOS A conditions during the AM peak hour and acceptable LOS B during the PM peak hour.

## TRANSIT SERVICE

Transit service in the City of Manteca is provided by Manteca Transit. Transit Route 2 (westbound) and Transit Route 3 (eastbound) provide fixed route service in the vicinity of the proposed project. The closest transit stops for Routes 2 and 3 are located directly west of the proposed Valencia Place Apartments Project on Atherton Drive, which is less than 300 feet west of the project site.

## BICYCLE AND PEDESTRIAN FACILITIES

The following types of bicycle facilities exist within the study area:

- On-street bike lanes (Class II) are designated for use by bicycles by striping, pavement legends, and signs.
- On-street bike route (Class III) are designated for use by bicycles with signage.

Unfortunately, there are no existing bicycle lanes in the vicinity of the Valencia Place Apartments Project. The closest Class II bike lanes exist are located south and east of the Valencia Place Apartments Project site on Woodward Avenue on Buena Vista Drive and Tannehill Drive. In addition, a Class II bike lane are also provided on the north side of SR 120 on Mission Ridge Drive between Union Road and Main Street.

The pedestrian network in the study area includes sidewalks along the north side of Atherton Drive west of Lakeside Avenue to Union Road. In addition, sidewalks are provided along the south side of Atherton Drive from Union Road to the west and Main Street to the east.

Sidewalks would be constructed on the north side of Atherton Drive along the Valencia Place Apartments Project site, a distance of approximately 400 feet. The remainder of the north side of Atherton Drive would not provide sidewalks until future development occurs east of the project site to Main Street.

## PROJECT TRIP GENERATION

Table 3 presents the estimated trips generated for the proposed Valencia Place Apartment Project during weekday daily, AM peak hour, and PM peak hour conditions. As shown below, the project would generate approximately 3,134 daily vehicle trips, 197 AM peak hour trips, and 240 PM peak hour trips. The trips generated by the residential land uses are based on trip rates from the *Trip Generation Manual* (9<sup>th</sup> Edition, Institute of Transportation Engineers 2017).

Table 3: Valencia Place Apartment Project Trip Generation Analysis												
Land Use (ITE Code)	Quantity	Unit	Trip Rate <sup>1</sup>			Trips						
						Daily	A.M. Peak Hour			P.M. Peak Hour		
			Daily	AM	PM		In	Out	Total	In	Out	Total
Apartments	428	Apartments	7.32	0.46	0.56	3,134	39	158	197	156	84	240
Total External Vehicle Trips						3,134	39	158	197	156	84	240
Notes: <sup>1</sup> Trip rate was determined by using Land Use Category 220 from the <i>Trip Generation Manual 10<sup>th</sup> Edition</i> (Institute of Transportation Engineers 2017). Source: Fehr & Peers February 2019												

## PROJECT TRIP DISTRIBUTION

The distribution of project generated vehicles trips was based on the following information and analysis methods:

1. Existing directional travel patterns on Atherton Drive, Union Road and Main Street during morning and evening commute time periods; and
2. Complementary land uses (i.e., jobs, shopping, etc.) within the City of Manteca and surrounding cities.

## EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

The “project only” trips developed through the trip generation and distribution processes were assigned to the roadway network by adding those new vehicle trips to Existing AM and PM Peak Hour traffic volumes. Table 4 displays the results of the Existing Plus Project operations analysis.

According to this table, the addition of project generated traffic to the four (4) study intersection will only result in minor changes to intersection levels of service.

During both morning and evening peak hours, the Union Road / Atherton Drive signalized intersection will continue to operate at acceptable LOS C conditions.

During both morning and evening peak hours, the Main Street / Atherton Drive signalized intersection will continue to operate at acceptable LOS B conditions.

At the Lakeside Avenue / Atherton Drive side street stop controlled intersection, the southbound right-turn movement will continue to operate at acceptable LOS A conditions during both morning and evening peak hours.

At the Tinnin Road / Valencia Place / Atherton Drive street stop controlled intersection, the southbound left-turn movement will operate at acceptable LOS A during the AM peak hour and acceptable LOS C during the PM peak hour. The northbound left-turn movement will also operate at acceptable LOS A during the AM peak hour and acceptable LOS C during the PM peak hour.

<b>Table 4: Peak Hour Intersection Analysis – Existing Plus Project AM and PM Peak Hour Conditions</b>					
<b>Intersection</b>	<b>Control</b>	<b>AM Peak Hour</b>		<b>PM Peak Hour</b>	
		<b>Delay<sup>1</sup></b>	<b>LOS</b>	<b>Delay<sup>1</sup></b>	<b>LOS</b>
Union Road / Atherton Drive	Signal	22.3	C	27.3	C
Main Street / Atherton Drive	Signal	17.3	B	19.5	B
Lakeside Avenue / Atherton Drive	SSSC	1.9 9.3 (SB RT)	A (entire) A (SB RT)	0.5 9.5 (SB RT)	A (entire) A (SB RT)
Tinnin Road / Valencia Place / Atherton Drive	SSSC	4.2 10.5 (SB LT) 10.8 (NB LT)	A (entire) A (SB LT) A (NB LT)	2.6 17.4 (SB LT) 16.8 (NB LT)	A (entire) C (SB LT) C (NB LT)

NOTES: LOS = LEVEL OF SERVICE. AWSC = ALL-WAY STOP CONTROL, SSSC = SIDE-STREET STOP CONTROL.

<sup>1</sup> FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES.

SOURCE: FEHR & PEERS, FEBRUARY 2019.

## 5. CUMULATIVE CONDITIONS ANALYSIS

This chapter presents the transportation impact analysis results for Cumulative and Cumulative Plus Project AM and PM Peak Hour conditions using a combination of the Cumulative Year 2042 Travel Demand Forecasts described in Chapter 3 and the trip generation and distribution of Valencia Place Apartment Project vehicle trips described in Chapter 4. It should be noted that the same distribution pattern for project-generated traffic was used for both Existing Plus Project and Cumulative Plus Project AM and PM Peak Hour Conditions.

### CUMULATIVE NO PROJECT INTERSECTION LEVELS OF SERVICE

Table 5 presents the results of the Cumulative No Project operations analyses. According to this table, the projected growth in traffic volumes on Atherton Drive, Union Road and Main Street will result in increased cycle lengths and delays to serve projected AM and PM peak hour conditions.

The combination of higher traffic volumes and extension of Atherton Drive west of Union Road results in the Union Road / Atherton Drive intersection operating at acceptable LOS C during the AM peak hour and acceptable LOS D during the PM peak hour. The Main Street / Atherton Drive intersection is projected to operate at acceptable LOS C during both AM and PM peak hours.

The unsignalized side street stop controlled intersection of Lakeside Drive / Atherton Drive will continue to operate at acceptable LOS A conditions during both AM and PM peak hours. The unsignalized side street stop controlled intersection of Tinnin Road / Atherton Drive is projected to operate at acceptable LOS B conditions during the AM peak hour and acceptable LOS C during the PM peak hour.

Table 5: Peak Hour Intersection Analysis – Cumulative No Project AM and PM Peak Hour Conditions					
Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
Union Road / Atherton Drive	Signal	25.4	C	36.4	D
Main Street / Atherton Drive	Signal	28.7	C	30.4	C
Lakeside Avenue / Atherton Drive	SSSC	0.5 9.2 (SB RT)	A (entire) A (SB RT)	0.3 9.7 (SB RT)	A (entire) A (SB RT)
Tinnin Road / Atherton Drive	SSSC	1.6 11.8 (NB LT)	A (entire) B (NB LT)	1.0 17.2 (NB LT)	A (entire) C (NB LT)

NOTES: LOS = LEVEL OF SERVICE. AWSC = ALL-WAY STOP CONTROL, SSSC = SIDE-STREET STOP CONTROL.

<sup>1</sup> FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES.

SOURCE: FEHR & PEERS, FEBRUARY 2018.

The signal warrant analysis for Cumulative No Project conditions indicate that the intersection of Tinnin Road / Atherton Drive does not meet peak hour signal warrants for either AM and PM peak hour conditions as a result of increased traffic volumes on eastbound / westbound Atherton Drive. This is consistent with the fact that the City of Manteca did not identify the need for a traffic signal at the Tinnin Road / Atherton Drive intersection in the Public Facilities Improvement Program.

## CUMULATIVE PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Table 6 presents the results of the Cumulative Plus Project operations analyses. According to this table, the addition of project generated traffic to the four (4) study intersection will only result in minor changes to intersection levels of service.

During the morning peak hour, the Union Road / Atherton Drive signalized intersection will continue to operate at acceptable LOS C conditions. During the evening peak hour, the Union Road / Atherton Drive signalized intersection will continue to operate at acceptable LOS D conditions

During both morning and evening peak hours, the Main Street / Atherton Drive signalized intersection will continue to operate at acceptable LOS B conditions.

At the Lakeside Avenue / Atherton Drive side street stop controlled intersection, the southbound right-turn movement will continue to operate at acceptable LOS A conditions during the AM peak hour and acceptable LOS B conditions during the PM peak hour.

<b>Table 6: Peak Hour Intersection Analysis – Cumulative Plus Project AM and PM Peak Hour Conditions</b>					
<b>Intersection</b>	<b>Control</b>	<b>AM Peak Hour</b>		<b>PM Peak Hour</b>	
		<b>Delay<sup>1</sup></b>	<b>LOS</b>	<b>Delay<sup>1</sup></b>	<b>LOS</b>
Union Road / Atherton Drive	Signal	28.9	C	42.1	D
Main Street / Atherton Drive	Signal	30.0	C	31.3	C
Lakeside Avenue / Atherton Drive	SSSC	1.4 9.9 (SB RT)	A (entire) A (SB RT)	0.5 10.2 (SB RT)	A (entire) B (SB RT)
Tinnin Road / Valencia Place / Atherton Drive	SSSC	3.3 13.0 (SB LT) 13.1 (NB LT)	A (entire) B (SB LT) B (NB LT)	2.7 24.3 (SB LT) 26.5 (NB LT)	A (entire) C (SB LT) D (NB LT)

NOTES: LOS = LEVEL OF SERVICE. AWSC = ALL-WAY STOP CONTROL, SSSC = SIDE-STREET STOP CONTROL.

<sup>1</sup> FOR SIGNALIZED AND ALL-WAY STOP CONTROLLED INTERSECTIONS, AVERAGE INTERSECTION DELAY IS REPORTED IN SECONDS PER VEHICLE FOR ALL APPROACHES.

SOURCE: FEHR & PEERS, FEBRUARY 2019.

At the Tinnin Road / Valencia Place / Atherton Drive street stop controlled intersection, the southbound left-turn movement will operate at acceptable LOS B during the AM peak hour and acceptable LOS C during the PM peak hour. The northbound left-turn movement will also operate at acceptable LOS B during the AM peak hour and acceptable LOS D during the PM peak hour.

The signal warrant analysis for Cumulative Plus Project conditions indicate that the intersection of Tinnin Road / Atherton Drive does not meet peak hour signal warrants for either AM and PM peak hour conditions as a result of increased traffic volumes on eastbound / westbound Atherton Drive. This is consistent with the fact that the City of Manteca did not identify the need for a traffic signal at the Tinnin Road / Atherton Drive intersection in the Public Facilities Improvement Program.

## 6. TRANSPORTATION IMPACT ANALYSIS CONCLUSIONS

This chapter presents the conclusions of the transportation impact analysis for the proposed Valencia Place Apartment Project in Manteca, California. The project site is bounded by Lakeside Avenue to the west, State Route 120 to the north and Atherton Drive to the south. As part of the proposed project, a new full access intersection will be constructed on Atherton Drive, directly across from Tinnin Road. In addition, access to the Valencia Place Apartments Project will be provided via Lakeside Drive with westbound right-turn in and southbound right-turn out at Atherton Drive.

### RESULTS OF THE INTERSECTION LEVEL OF SERVICE ANALYSIS

All four (4) unsignalized study intersection would continue to operate at acceptable LOS C or better under Existing Plus Project AM and PM peak hour conditions. Therefore, impacts would be considered less than significant.

The signal warrant analysis for Cumulative No Project conditions indicate that the intersection of Tinnin Road / Atherton Drive does not meet peak hour signal warrants for either AM and PM peak hour conditions as a result of increased traffic volumes on eastbound / westbound Atherton Drive.

Under Cumulative Plus Project Conditions, the addition of vehicle traffic generated by the proposed Valencia Place Apartment Project would result in only a minor change in average vehicle delay. During the morning peak hour, the Union Road / Atherton Drive signalized intersection will continue to operate at acceptable LOS C conditions. During the evening peak hour, the Union Road / Atherton Drive signalized intersection will continue to operate at acceptable LOS D conditions. During both morning and evening peak hours, the Main Street / Atherton Drive signalized intersection will continue to operate at acceptable LOS B conditions.

At the Lakeside Avenue / Atherton Drive side street stop controlled intersection, the southbound right-turn movement will continue to operate at acceptable LOS A conditions during the AM peak hour and acceptable LOS B conditions during the PM peak hour. At the Tinnin Road / Valencia Place / Atherton Drive street stop controlled intersection, the southbound left-turn movement will operate at acceptable LOS B during the AM peak hour and acceptable LOS C during the PM peak hour. The northbound left-turn movement will also operate at acceptable LOS B during the AM peak hour and acceptable LOS D during the PM peak hour.

The signal warrant analysis for Cumulative Plus Project conditions indicate that the intersection of Tinnin Road / Atherton Drive does not meet peak hour signal warrants for either AM and PM peak hour conditions as a result of increased traffic volumes on eastbound / westbound Atherton Drive. This is consistent with the fact that the City of Manteca did not identify the need for a traffic signal at the Tinnin Road / Atherton Drive intersection in the Public Facilities Improvement Program. Therefore, impacts would be considered less than significant.



## **RESULTS OF THE AIR TRAFFIC PATTERNS ANALYSIS**

The proposed project does not include airport or airstrip facilities and is not located adjacent to an airport or airstrip. According to the San Joaquin Council of Governments (SJCOG) Regional Transportation Plan, the project site is a compatible land use based on its location relative to the Stockton Airport. The proposed project does not include buildings over two stories, and there are no proposed towers or other elevated structures proposed. The proposed project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. Implementation of proposed project would have no impact relative to this topic.

## **RESULTS OF THE SITE CIRCULATION AND EMERGENCY VEHICLE ACCESS ANALYSIS**

No site circulation or access issues have been identified that would cause a traffic safety problem/hazard or any unusual traffic congestion or delay. The volumes on the internal roadways and drive aisles would be relatively low such that no significant conflicts would be expected with through traffic on Atherton Drive or Lakeside Avenue.

All emergency vehicles arriving to and from the proposed Valencia Place Apartment Project would be able to enter via Atherton Drive or Lakeside Avenue. All accesses would be designed to City standards that accommodate turning requirements for fire trucks. These multiple entry/exit points provide flexibility for emergency vehicles to access or evacuate from multiple directions during an emergency.

At the proposed project entrance on Atherton Drive, there are no safety, capacity, or sight distance issues identified with providing either an eastbound left-turn or westbound right-turn movement entering the project site.

In addition, at the proposed project entrance on Lakeside Avenue there were no safety, capacity, or sight distance issues identified with providing a northbound right-turn movement entering the project site.

Therefore, impacts associated with design features and emergency access would be considered less than significant.

## **RESULTS OF THE CONSISTENCY WITH MANTECA GENERAL PLAN POLICIES ANALYSIS**

The Manteca General Plan is a long-range comprehensive planning document required by state law to set policy and guide future growth, development and conservation of resources. The Plan was adopted by the City in 2003 and amended most recently in 2016. The following 2011 General Plan Circulation Element goals and policies are relevant to circulation in Manteca.

Goals:

Goal C-1. Provide for a circulation system that allows for the efficient movement of people, goods, and services within and through Manteca while minimizing public costs to build and maintain the system.

Goal C-2. Provide complete streets designed to serve a broad spectrum of travel modes, including automobiles, public transit, walking, and bicycling.

Goal C-3. Develop attractive streetscapes that include landscaping, street trees, planted berms, and landscaped medians.

Goal C-4. Support the development of a Downtown area that is highly accessible to all modes of travel, focusing primarily on pedestrians, bicyclists, and transit riders.

Goal C-5. Balance the level of service for all modes so that residents and visitors have a variety of transportation choices.

Goal C-6. Maintain a safe transportation system for all modes.

Goal C-7. Accommodate truck and freight movements by developing city-wide truck routes and encouraging the development of freight and warehousing centers near existing rail lines and spurs.

Goal C-8. Establish reasonable parking requirements (minimum and maximum rates for uses) that limit parking encroachment while minimizing the amount of land consumed by parking lots.

Goal C-9. Provide a safe, secure, and convenient bicycle route system that connects to retail, employment centers, public facilities, and parks.

Goal C-10. Provide for safe and convenient pedestrian circulation.

Goal C-11. Maintain a coordinated, efficient bus service that provides both an effective alternative to automobile use and serves members of the community that cannot drive.

Goal C-12. Support and encourage regional transit connections that link Manteca to other cities.

#### Policies:

Policies in the Circulation Element are organized by topic. Policies for each topic most relevant to this report are summarized below

Level of Service: Policies C-P-1 through CP-3 promote balanced levels of service (LOS) across all modes and vehicular LOS of D or better, except in downtown and certain other locations where other goals predominate.

Street System: Policies C-P-8 through C-P-11 and C-P-17 promote access and connectivity for all modes. Policy C-P-12 promotes use of roundabouts.

Transportation Safety: Policies C-P-20 through C-P-22 promote hazard reduction, maintenance of sight distances, and development of landscape separated sidewalks, respectively.

Parking: Policy C-P-23 notes that future growth in traffic volumes may require removal of on-street parking. Bikeways and Pedestrian Facilities: Policies C-P-29 through C-P-40 promote development of safe and complete bicycle and pedestrian networks across the city.

Public Transportation: Policies C-P-41 through C-P-43 promote interregional bus and rail connections. Policy C-P-44 promotes intermodal connectivity. Policy C-P-45 and C-P-46 promote ridesharing. Policy C-P-48 promotes inclusion of transit on future roadways.

Goods Movement: Policies C-P-50 and C-P-52 promote truck access where appropriate. Policy C-P-51 promotes rail access within the City.

Transportation Demand Management: Policies C-P-53 through C-P-56 support programs which encourage alternatives to reduce the number and length of automobile trips.

The proposed Valencia Place Apartment Project does not conflict with any of the above listed policies from the General Plan Transportation & Circulation Element. The proposed Valencia Place Apartment Project would not generate a significant increase in traffic in the area and it would not decrease levels of service to unacceptable levels. In addition, the proposed project would not change the design of any existing pedestrian or bicycle facilities or create any new safety problems in the area. The proposed project will add a small amount of both pedestrians and bicyclists who will utilize both existing and planned facilities connecting the project site with the community at large. The internal pedestrian circulation system will be designed to the City's standard for pedestrian sidewalks.

The proposed Valencia Place Apartment Project would not interfere with any existing bus routes and would not remove or relocate any existing bus stops. The proposed project also would not conflict with any transit plans or goals of the City of Manteca and, based on the size of the project, it would be expected to generate increased transit ridership to Manteca Transit Route 2 (westbound) and Transit Route 3 (eastbound) on Atherton Drive.

Implementation of the proposed project would have a less than significant impact relative to this topic.

