




THE TRAILS OF MANTECA PROJECT

DRAFT
ENVIRONMENTAL IMPACT REPORT

SCH No.: 2010072042



October 14, 2010






DRAFT
Environmental Impact Report
The Trails of Manteca Project
City of Manteca, San Joaquin County, California

State Clearinghouse No. 2010072042

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
Air Basin	San Joaquin Valley Air Basin
AM Peak	Weekday morning peak hour (7 a.m. to 9 a.m.)
AQP	Air Quality Plan
AST	aboveground storage tank
ATCM	Airborne Toxic Control Measures
BMP	Best Management Practices
BVOC	biogenic volatile organic compound
C	Celsius
CAAQS	California Ambient Air Quality Standards
Cal OSHA	California Occupational Health and Safety Administration
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCIC	Central California Information Center
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	chlorofluorocarbon
CH_4	methane
CHL	California Historical Landmarks
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level

CNPS	California Native Plant Society
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CPHI	California Points of Historical Interest
CPUC	California Public Utilities Commission
CVFPB	Central Valley Flood Protection Board
CWA	Clean Water Act
dB	decibel
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EB	eastbound
EIR	Environmental Impact Report
EMF	electromagnetic field
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
GWh/y	gigawatt-hours per year
GWP	global warming potential
HCM	Highway Capacity Manual
HFC	hydrofluorocarbon

HRI	California Historic Resources Inventory
HVAC	heating, ventilation, and air conditioning
Hz	hertz
I	Interstate
IPCC	United Nations Intergovernmental Panel on Climate Change
ISR	Indirect Source Review
ITE	Institute of Transportation Engineers
L_{dn}	day/night average sound level
LED	light emitting diode
L_{eq}	equivalent sound level
LESA	Land Evaluation and Site Assessment
LID	Low Impact Development
LOS	Level of Service
MBA	Michael Brandman Associates
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MMI	Modified Mercalli Intensity
mph	miles per hour
$MTCO_2e$	metric tons of carbon dioxide equivalent
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NB	northbound
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide

NOC	Notice of Completion
NOI	Notice of Intent
NOP	Notice of Preparation
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OEHHA	California Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHWM	ordinary high water mark
PCB	polychlorinated biphenyl
pCi/l	picoCuries per liter
PFC	perfluorocarbon
PG&E	Pacific Gas and Electric Company
Phase I ESA	Phase I Environmental Site Assessment
PM Peak	Weekday afternoon peak hour (4 p.m. to 6 p.m.)
PM_x	particulate matter
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PVC	polyvinyl chloride
RCRA	Federal Resource Conservation and Recovery Act
RD	Reclamation District
RMP	Risk Management Plan
rms	root mean square

ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SB	southbound
SF_6	sulfur hexafluoride
SJCOG	San Joaquin Council of Governments
SJMSCP	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	sulfur dioxide
SR	State Route
SSJID	South San Joaquin Irrigation District
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TCM	transportation control measures
TDS	total dissolved solids
Tg	teragram
therms/y	therms per year
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
VMT	vehicle miles traveled
WARM	Waste Reduction Model
WB	westbound

EXECUTIVE SUMMARY

Purpose

This Draft Environmental Impact Report (Draft EIR) is prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the implementation of The Trails of Manteca Project (State Clearinghouse No. 2010072042). This document is prepared in conformance with CEQA (California Public Resources Code, Section 21000, et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000, et seq.).

The purpose of this Draft EIR is to inform decision makers, representatives of affected and responsible agencies, the public, and other interested parties of the potential environmental effects that may result from implementation of the proposed project. This Draft EIR describes potential impacts relating to a wide variety of environmental issues and methods by which these impacts can be mitigated or avoided.

Project Summary

Project Location

The project site is located in the City of Manteca, San Joaquin County, California. The project site consists of five parcels totaling 477 acres, bounded by E. Woodward Road (north), S. Woodward Avenue (west), vacant land to the east and the south. The project site is located on the Lathrop, California, United States Geologic Survey 7.5-minute quadrangle, Township 2 South, Range 7 East, Unsectioned (Latitude: 37°46’05” North; 121°16’40” West).

Project Description

The proposed project consists of a 1,650 dwelling-unit planned residential community. Dwelling units would consist of 1,178 single-family units and 472 multi-family units. The project would incorporate a trail system throughout the site of over 12 miles that will eventually connect to the City facilities. The proposed project also includes over 75 acres of linear parks and a clubhouse to be utilized by the residents. The proposed project requires General Plan Amendment.

Project Objectives

The objectives of the proposed project are to:

- Promote economic growth through new capital investment, an expanded population base, and an expanded tax base.
- Provide new residential opportunities to accommodate forecasted population growth within the City of Manteca.

- Provide a diversity of housing choices in one development that would cater to various segments of the community.
- Develop land to its highest and best use within the City of Manteca city limits and primary urban service boundary.
- Provide a high-quality residential development project that offers recreational and open space amenities for residents.

Significant Unavoidable Adverse Impacts

The proposed project would result in the following significant unavoidable adverse impacts:

- **Important Farmland:** The proposed project would convert Important Farmland to non-agricultural use. Although mitigation is proposed that would require the applicant to pay the City of Manteca's agricultural mitigation fee, it would not fully mitigate the impact to a level of less than significant. Therefore, the residual significance of this impact is significant and unavoidable.
- **Air Quality Violations – Construction and Operational Emissions:** Construction and operational emissions would exceed San Joaquin Valley Air Pollution Control District (SJVAPCD) thresholds. Mitigation is proposed requiring the implementation of feasible emissions reduction measures; however, these measures would not reduce emissions to below SJVAPCD thresholds. Therefore, the residual significance of this impact is significant and unavoidable.
- **Air Quality Attainment Plan Consistency:** Because construction and operational emissions would exceed SJVAPCD, they would be inconsistent with the agency's regional quality planning assumptions. Mitigation is proposed requiring the implementation of feasible emissions reduction measures; however, these measures would not reconcile this inconsistency. Therefore, the residual significance of this impact is significant and unavoidable.
- **Cumulative Air Quality:** Because project emissions result in a significant unavoidable air quality impact associated with air quality violations and air quality attainment plan consistency, a significant unavoidable cumulative air quality impact would occur.
- **Greenhouse Gas Emissions:** Construction and operational greenhouse gas emissions would exceed SJVAPCD thresholds. Mitigation is proposed requiring the implementation of feasible emissions reduction measures; however, these measures would not reduce emissions to below SJVAPCD thresholds. Therefore, the residual significance of this impact is significant and unavoidable.
- **Roadway Noise:** The proposed project's vehicle trips would contribute to roadway noise levels that exceed acceptable noise exposure standards for adjoining land uses. No feasible

mitigation is available to mitigate this impact. Therefore, the residual significance of this impact is significant and unavoidable.

- **Existing Plus Project Traffic:** The proposed project would generate vehicle trips that would contribute to unacceptable intersection under Existing Plus Project conditions. Mitigation is proposed that would require the applicant to contribute fees to fund necessary improvements; however, there is uncertainty regarding actual implementation of the improvements. As such, the residual significance of this impact is significant and unavoidable.
- **Cumulative Traffic:** The proposed project would generate vehicle trips that would contribute to unacceptable intersection and freeway operations under Cumulative conditions. Mitigation is proposed that would require the applicant to contribute fees to fund necessary improvements; however, there is uncertainty regarding actual implementation of the improvements. As such, the residual significance of this impact is significant and unavoidable.

Summary of Project Alternatives

Below is a summary of the alternatives to the proposed project considered in Section 5, Alternatives to the Proposed Project.

No Project Alternative

The project site would remain in its existing condition and no new development would occur.

Reduced Density Alternative

A residential development consisting of 1,237 dwelling units (single-family and multi-family) would be developed on 250 acres of the developable portion of the project site. The remaining 50 acres would remain in agricultural production. The Reduced Density Alternative is identified as the Environmentally Superior Alternative.

Single-Family Residential Alternative

A residential development consisting of 1,300 single-family detached residential units would be developed on the 300-acre developable portion of the project site.

Areas of Controversy

Pursuant to CEQA Guidelines Section 15123(b), a summary section must address areas of controversy known to the lead agency, including issues raised by agencies and the public, and it must also address issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects.

A Notice of Preparation (NOP) for the proposed project was issued on July 15, 2010. The NOP described the project and issues to be addressed in the EIR was distributed to the State Clearinghouse,

responsible agencies, and other interested parties for a 30-day public review period extending from July 15, 2010 through August 13, 2010. The NOP identified the potential for significant impacts on the environment related to the following topical areas:

- Aesthetics, Light, and Glare
- Agricultural Resources
- Air Quality/Greenhouse Gas Emissions
- Biological Resources
- Cultural Resources
- Geology, Soils, and Seismicity
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Population and Housing
- Public Services and Utilities
- Transportation

Disagreement Among Experts

This Draft EIR contains substantial evidence to support all the conclusions presented herein. It is possible that there will be disagreement among various parties regarding these conclusions, although the City of Manteca is not aware of any disputed conclusions at the time of this writing. Both the CEQA Guidelines and case law clearly provide the standards for treating disagreement among experts. Where evidence and opinions conflict on an issue concerning the environment, and the lead agency knows of these controversies in advance, the EIR must acknowledge the controversies, summarize the conflicting opinions of the experts, and include sufficient information to allow the public and decision makers to make an informed judgment about the environmental consequences of the proposed project.

Potentially Controversial Issues

Below are a list of potentially controversial issues that may be raised during the public review and hearing process of this Draft EIR.

- Agricultural Land Conversion
- Criteria Pollutant Air Emissions
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Land Use
- Construction and Operational Noise
- Public Services
- Traffic Congestion

It is also possible that evidence will be presented during the 45-day, statutory Draft EIR public review period that may create disagreement. Decision makers would consider this evidence during the public hearing process.

In rendering a decision on a project where there is disagreement among experts, the decision makers are entitled to weigh the evidence relating to the accuracy and sufficiency of the information and to decide whether to accept it. Decision makers need not resolve a dispute among experts. However, in their proceedings, decision makers must consider comments received concerning the adequacy of the Draft EIR and address any objections raised in these comments. In addition, where experts disagree

on data or methodology, the Draft EIR should acknowledge the differing opinions and explain why a certain approach was rejected, supporting that explanation with substantial evidence.

Public Review of the Draft EIR

Upon completion of the Draft EIR, the City of Manteca filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the public review period (Public Resources Code, Section 21161). Concurrent with the NOC, this Draft EIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with Public Resources Code 21092(b)(3). During the public review period, the Draft EIR, including the technical appendices, is available for review at the City of Manteca. The address for each location is provided below.

City of Manteca
Community Development Department
1001 W. Center Street
Manteca, CA 95337
Hours:
Monday-Thursday 7:30 a.m. to 5:00 p.m.
Friday 8:00 a.m. to 5:00 p.m.
(Closed alternating Fridays)

Stockton-San Joaquin County Public Library
Manteca Branch Library
320 W. Center Street
Manteca, CA 95336-4539
Hours:
Monday, Wednesday: 11 a.m. to 7 p.m.
Tuesday, Thursday: 10 a.m. to 6 p.m.
Friday: 12 p.m. to 5 p.m.
Saturday: 10 a.m. to 4 p.m.

The Draft EIR is also available electronically on the City of Manteca's website: http://www.ci.manteca.ca.us/.

Agencies, organizations, and interested parties have the opportunity to comment on the Draft EIR during the 45-day public review period. Written comments on this Draft EIR should be addressed to:

Ms. Erika Durrer, Senior Planner
City of Manteca
Community Development Department
1001 W. Center Street
Manteca, CA 95337
Phone: (209) 456-8522
Fax: (209) 923-8949
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Submittal of electronic comments in Microsoft Word or Adobe PDF format is encouraged. Upon completion of the public review period, written responses to all significant environmental issues raised will be prepared and made available for review by the commenting agencies at least 10 days prior to the public hearing on the project before the City of Manteca, at which the certification of the Final EIR will be considered. Comments received and the responses to comments will be included as part of the record for consideration by decision makers for the project.

Executive Summary Matrix

Table ES-1 below summarizes the impacts, mitigation measures, and resulting level of significance after mitigation for the relevant environmental issue areas evaluated for the proposed project. The table is intended to provide an overview; narrative discussions for the issue areas are included in the corresponding section of this EIR. Table ES-1 is included in the EIR as required by CEQA Guidelines Section 15123(b)(1).

Table ES-1: Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 3.1 – Aesthetics, Light, and Glare		
Impact AES-1: The proposed project would not have a substantial adverse effect on a scenic vista.	No mitigation is necessary.	Less than significant impact.
Impact AES-2: The proposed project would not degrade the visual character of the project site and its surroundings.	**MM AES-2a:** Prior to issuance of the first building permit, the applicant shall prepare and submit Design Guidelines that establish Building Design Standards to the City of Manteca for review and approval. The Building Design Standards shall at a minimum address the following as described in the applicable General Plan policies: minimal visual prominence of garages, incorporation of entry gateways, signage, and well-designed boundary walls; natural/neutral exterior color scheme; climate responsive and pedestrian-friendly architectural features such as canopies, overhangs, and awnings; building design that uses natural ventilation and is oriented to minimize solar gain and maximize daylight; visually unobtrusive installation of solar collectors, etc.; and/or additional standards as determined the Community Development Director. The approved Building Design Standards shall be incorporated into the proposed project. **MM AES-2b:** Prior to issuance of the first building permit, the applicant shall prepare and submit Design Guidelines that establish Landscape Design Standards to the City of Manteca for review and approval. The Landscape Design Standards shall at a minimum address the following as described in the applicable General Plan policies: a common landscape theme that includes primary street trees along major arterial streets; a street tree program; use of non-fruiting species such as flowering pear and plum as secondary accent trees in landscape corridors along major streets; parking lot trees, or additional standards as determined the Community Development Director. The approved Landscaping Design Standards shall be incorporated into the proposed project.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	MM AES-2c: Prior to issuance of the first building permit, the applicant shall prepare and submit Design Guidelines that establish Street Design Standards to the City of Manteca for review and approval. The Street Design Standards shall at a minimum address the following as described in the applicable General Plan policies: interconnection between the pedestrian and bikeway system and its linkage to the Citywide Pedestrian and Bikeway Trail System; street lighting; common landscape theme along major arterial streets, or additional standards as determined the Community Development Director. The approved Street Design Standards shall be incorporated into the proposed project.	
Impact AES-3: Implementation of the proposed project would not result in the introduction of substantial new sources of light and glare.	**MM AES-3:** Prior to issuance of the first building permit, the applicant shall prepare and submit an outdoor lighting plan (which includes a photometric analysis) to the City of Manteca that includes a footcandle map illustrating the amount of light from the project site at adjacent light sensitive receptors. The lighting map shall comply with the following General Plan policies and shall include minimal levels of street; parking, building, site, and public area lighting to meet safety standards and provide direction; directional shielding for all exterior lighting; and automatic shutoff or motion sensors and/or additional standards as determined by the Community Development Director.	Less than significant impact.
Section 3.2 – Agricultural Resources		
Impact AG-1: The proposed project may result in the conversion of Important Farmland to non-agricultural use.	**MM AG-1:** At the time building permits are sought for the proposed project, the project applicant shall pay the required City of Manteca agricultural mitigation fee to help offset the conversion of Important Farmland pursuant to Manteca Municipal Code Chapter 13.42.	Significant and unavoidable impact.
Impact AG-2: The proposed project may conflict with an active Williamson Act Contract.	**MM AG-2:** Prior to recordation of the final map for the proposed project, the project applicant shall pay the Williamson Act Contract cancellation fee as determined by the San Joaquin County Assessor's Office.	Less than significant impact
Impact AG-3: The project would not involve other changes to the existing environment, which, because of their location or nature, could result in conversion of farmland to non-agricultural use.	No mitigation is necessary.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 3.3 – Air Quality/Greenhouse Gas Emissions		
Impact AIR-1: Project construction and operational emissions may violate an air quality standard or contribute substantially to an existing or projected air quality violation.	**MM AIR-1a:** During construction activities, the construction contractor shall implement the following air emissions reduction measures: • Construction equipment shall be properly maintained at an offsite location; maintenance shall include proper tuning and timing of engines. Equipment maintenance records and data sheets of equipment design specifications shall be kept onsite during construction. • Onsite construction equipment shall not idle for more than 5 minutes in any one hour or be shut down when not in use. • During the building phase, onsite electrical hook ups shall be provided for electric construction tools including saws, drills and compressors, to eliminate the need for diesel powered electric generators. • Construction workers shall be encouraged to carpool to and from the construction site. Workers shall be advised at a pre-construction meeting about carpooling opportunities. **MM AIR-1b:** During the architectural coating phase, paints with a volatile organic compound content less than 10 grams per liter shall be used. **MM AIR-1c:** Prior to issuance of building permits, the project applicant shall demonstrate compliance with all applicable requirements of San Joaquin Valley Air Pollution Control District, Rule 9510 via the submittal of a Rule 9510 Implementation Plan to the City of Manteca for review and approval. The implementation plan shall achieve a 33-percent reduction in NO_x and a 45-percent reduction in PM10 over the first 10 years of operations through the use of onsite emissions reduction measures or through the payment of offsite mitigation fees to the SJVAPCD for purchase of emission reductions. The requirements of the approved implementation plan shall be incorporated into the proposed project. **MM AIR-1d:** Prior to approval of the final map, the City of Manteca shall verify that the project complies San Joaquin Valley Air Pollution Control District Rule 4901, which limits emissions from wood burning heaters,	Significant unavoidable impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	fireplaces, and outdoor wood burning devices. Compliance shall be verified by confirming that project's wood stoves or fireplaces do not exceed one of the following combinations of units: • 100 wood stoves and 500 fireplaces; or • Zero (0) wood stoves and 600 fireplaces; or • 280 wood stoves and zero (0) fireplaces; or • 210 wood stoves and 210 fireplaces. **MM AIR-1e:** Prior to issuance of building permits for each dwelling unit, the project applicant shall demonstrate that each habitable structure can exceed the latest edition of the Title 24 energy efficiency standards by a minimum of 10 percent.	
Impact AIR-2: Project emissions of carbon monoxide would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.	No mitigation is necessary.	Less than significant impact.
Impact AIR-3: The project may conflict with or obstruct implementation of the applicable air quality attainment plan.	Implement Mitigation Measures AIR-1a, AIR-1b, AIR-1c, AIR-1d, AIR-1e, TRANS-6a, and TRANS-6b.	Significant unavoidable impact.
Impact AIR-4: The project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).	Implement Mitigation Measures AIR-1a, AIR-1b, AIR-1c, AIR-1d, AIR-1e, TRANS-6a, TRANS-6b, and TRANS-6c.	Significant unavoidable impact.
Impact AIR-5: The project would not expose sensitive receptors to substantial pollutant concentrations.	Implement Mitigation Measure AIR-1e.	Less than significant impact.
Impact AIR-6: The project would not create objectionable odors affecting a substantial number of people.	No mitigation is necessary.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact AIR-7: The project would generate greenhouse gas emissions that would have a significant impact on the environment and would conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.	Implement Mitigation Measures AES-2a, AES-2b, AIR-1d, AIR-1e, PSU-6b, PSU-6c, TRANS-6a, TRANS-6b, and TRANS-6c.	Significant unavoidable impact.
Impact AIR-8: The project may be affected by climate change through a reduction in the quality and supply of water available within the State or increased flooding.	Implement Mitigation Measures HYD-4, HYD-5a, HYD-5b, PSU-6b, and PSU-6c.	Less than significant impact.
Section 3.4 – Biological Resources		
Impact BIO-1: Development activities may have a substantial adverse effect, either directly or through habitat modifications, on special-status wildlife species.	**MM BIO-1a:** If ground clearing or vegetation removal activities occur during the nesting season (February 15 through August 31), then pre-construction surveys for nesting birds shall be conducted in all area suitable for nesting that are located within 250 feet of the project area to be impacted. Surveys shall be conducted no more than 15 days prior to the beginning of ground disturbance. If an active nest is located, a 250-foot buffer shall be delineated and maintained around the nest until a qualified biologist has determined that fledging has occurred. Alternatively, CDFG may be consulted to determine if the protective buffer can be reduced based upon individual species responses to disturbance. This mitigation measure does not apply if ground clearing or vegetation removal activities occur outside of the nesting season (September 1 through February 1). **MM BIO-1b:** No more than 30 day prior to the beginning of ground disturbance, a pre-construction survey for burrowing owls shall be conducted by a qualified biologist within the areas to be impacted in general accordance with the Burrowing Owl Survey Protocol and Mitigation Guidelines by the California Burrowing Owl Consortium. Should the surveys be scheduled to occur during the period extending from February 1 through May 1, then surveys shall be conducted no more that 15 days prior to the start of ground disturbance. Surveys shall be conducted from 2 hours before sunset to 1 hour after sunset, or from 1 hour before sunrise to 2 hours after sunrise, and shall be conducted during weather	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	conducive to observing owls outside of their burrows. No surveys shall occur during heavy rain, high winds, or dense fog. If occupied burrows are found, mitigation for potential impacts shall follow the guidelines outlined by the Burrowing Owl Survey Protocol and Mitigation Guidelines, including passive relocation.	
Impact BIO-2: Development activities may have a substantial adverse effect on riparian habitat.	**MM BIO-2:** Prior to issuance of grading permits within any impacted resource area, the project applicant shall obtain all required authorization from agencies with jurisdiction over the irrigation ditches within the project area. Such agencies may include but are not limited to the United States Army Corps of Engineers, the California Department of Fish and Game, and the Central Valley Regional Water Quality Control Board. Impacted resources shall be offset through onsite restoration, offsite restoration, or purchase of credits at an agency-approved mitigation bank in the region at no less than a 1:1 ratio.	Less than significant impact.
Impact BIO-3: Development activities may have a substantial adverse effect on federally protected wetlands.	No mitigation is necessary.	Less than significant impact.
Impact BIO-4: Development activities would not interfere substantially with the movement of any native resident or migratory fish or wildlife species.	No mitigation is necessary.	Less than significant impact.
Impact BIO-5: Development activities may conflict with local biological policies or ordinances.	**MM BIO-5:** Prior to issuance of grading permits for any activities that would remove one or more trees subject to City of Manteca Ordinance 17.19.060, the applicant shall prepare and submit a tree removal and replacement plan to the City of Manteca for review and approval. The plan shall identify all trees proposed for removal and proposed replacement tree species and locations. Replacement shall occur at no less than a 1:1 ratio. All replacement trees shall be no less than a 24-inch-box-size species.	Less than significant impact.
Impact BIO-6: Development activities may conflict with the provisions of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.	**MM BIO-6:** Prior to issuance of grading permits for the proposed project, the applicant shall pay all fees in accordance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 3.5 – Cultural Resources		
Impact CUL-1: The proposed project may cause a substantial adverse change in the significance of a historical resource.	**MM CUL-1:** If potentially significant historic resources are encountered during subsurface excavation activities for the project area, all construction activities within a 100-foot radius of the resource shall cease until a qualified archaeologist determines whether the resource requires further study. The City shall require that the applicant include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction shall be recorded on appropriate California Department of Parks and Recreation forms and evaluated for significance in terms of California Environmental Quality Act criteria by a qualified archaeologist. Potentially significant cultural resources consist of but are not limited to stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites. If the resource is determined to be significant under CEQA, the City and a qualified archaeologist shall determine whether preservation in place is feasible. Such preservation in place is the preferred mitigation. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan for the resource. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the appropriate information center (California Historical Resources Information System), and provide for the permanent curation of the recovered materials.	Less than significant impact.
Impact CUL-2: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered archaeological resources.	**MM CUL-2:** If potentially significant archaeological resources are encountered during subsurface excavation activities, all construction activities within a 100-foot radius of the resource shall cease until a qualified archaeologist determines whether the resource requires further study. The City shall require that the applicant include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance in terms of California Environmental Quality Act criteria by a qualified archaeologist. Potentially significant cultural resources consist of but are not limited to	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites. If the resource is determined to be significant under CEQA, the City and a qualified archaeologist shall determine whether preservation in place is feasible. Such preservation in place is the preferred mitigation. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan for the resource. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the appropriate information center (California Historical Resources Information System), and provide for the permanent curation of the recovered materials.	
Impact CUL-3: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered paleontological resources.	**MM CUL-3:** In the event that plant or animal fossils are discovered during subsurface excavation activities for the proposed project, all excavation within 50 feet of the fossil shall cease until a qualified paleontologist has determined the significance of the find and provides recommendations in accordance with Society of Vertebrate Paleontology standards. The paleontologist shall notify the City of Manteca to determine procedures to be followed before construction is allowed to resume at the location of the find. If the find is determined to be significant and the City determines that avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with the Society of Vertebrate Paleontology standards. The plan shall be submitted to the City for review and approval. Upon approval, the plan shall be incorporated into the project.	Less than significant impact.
Impact CUL-4: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered human remains.	**MM CUL-4:** If previously unknown human remains are encountered during construction activities, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed: In the event of an accidental discovery or recognition of any human remains, Public Resource Code Section 5097.98 must be followed. Once project-related ground disturbance begins and if there is accidental discovery of human remains, the following steps shall be taken: • There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the San Joaquin County Coroner's Office is contacted to determine if the remains are Native American and if an investigation into cause of	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	death is required. If the coroner determines the remains are Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the most likely descendant (MDL) of the deceased Native American. The MDL may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.	
Section 3.6 – Geology, Soils, and Seismicity		
Impact GEO-1: Development of the proposed project may expose persons or structures to seismic hazards.	**MM GEO-1:** Prior to issuance of building permits, the project applicant shall submit a design-level geotechnical study and building plans to the City of Manteca for review and approval. The building plans shall demonstrate that they incorporate all applicable recommendations of the design-level geotechnical study and comply with all applicable requirements of the most recent version of the California Building Standards Code. A licensed professional engineer shall prepare the plans, including those that pertain to soil engineering, structural foundations, pipeline excavation, and installation. The approved plans shall be incorporated into the proposed project. All onsite soil engineering activities shall be conducted under the supervision of a licensed Geotechnical Engineer or Certified Engineering Geologist.	Less than significant impact.
Impact GEO-2: Construction activities associated with the proposed project have the potential to create erosion and sedimentation.	Implement Mitigation Measure HYD-1.	Less than significant impact.
Impact GEO-3: The proposed project would not expose persons or structures to hazards associated with unstable geologic units or soils.	Implement Mitigation Measure GEO-1.	Less than significant impact.
Impact GEO-4: Development of the proposed project would not expose persons or structures to hazards associated with expansive soils.	No mitigation is necessary.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 3.7 – Hazards and Hazardous Materials		
Impact HAZ-1: Development of the proposed project does not have the potential to expose human health and the environment to hazardous materials associated with past or present usage of the project site or surrounding land uses.	**MM HAZ-1a:** Prior to recordation of the final map, the applicant shall retain a qualified consultant to perform groundwater sampling in the vicinity of the former aboveground storage tank. If the sampling determines that concentrations of hydrocarbons exceed acceptable levels, the applicant shall consult with the Central Valley Regional Water Quality Control Board regarding ongoing monitoring and remediation activities. If necessary, the final map shall include provisions to allow groundwater monitoring and remediation to occur during project construction and operations. **MM HAZ-1b:** Prior to issuance of grading permits, the project applicant shall retain a qualified consultant to perform testing of soils in the vicinity of the residence for the presence of residual concentrations of agricultural chemicals. Soils shall be laboratory tested for organochlorine pesticides in accordance with California Department of Toxic Substances Control (DTSC) guidelines. If the testing yields concentrations in excess of acceptable limits for commercial development, the project applicant shall retain a qualified contractor to perform soil remediation in accordance with DTSC guidelines. The soil remediation activities shall be completed prior to grading activities. The applicant shall submit documentation to the City of Manteca demonstrating that soil testing was performed and any necessary remediation was completed as part of the grading permit application. **MM HAZ-1c:** Prior to demolition activities of any structures located on the project site, the project applicant shall retain a certified hazardous waste contractor to determine the presence or absence of building materials or equipment that contains hazardous waste, including asbestos, lead-based paint, mercury, and PCBs. If such substances are found to be present, the contractor shall properly remove and dispose of these hazardous materials in accordance with federal and state law. All removal activities shall be completed prior to commencement of demolition activities. Following completion of removal activities, the applicant shall submit documentation	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	to the City of Manteca verifying that all hazardous materials were properly removed and disposed. **MM HAZ-1d:** Prior to grading activities, any onsite wells or septic systems shall be destroyed under permit and inspection with San Joaquin County Environmental Health Department.	
Impact HAZ-2: The proposed project may create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions.	Implement Mitigation Measures HAZ-1c and HYD-1.	Less than significant impact.
Impact HAZ-3: The proposed project may impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Implement Mitigation Measure TRANS-4.	Less than significant impact.
Section 3.8 – Hydrology and Water Quality		
Impact HYD-1: Construction activities associated with the proposed project have the potential to degrade water quality in downstream water bodies.	**MM HYD-1:** Prior to the issuance of grading permits, the project applicant shall prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) to the RWQCB electronically and a copy to the City of Manteca that identifies specific actions and Best Management Practices (BMPs) to prevent stormwater pollution during construction activities. The SWPPP shall identify a practical sequence for BMP implementation, monitoring, and maintenance; site restoration; contingency measures; responsible parties; and agency contacts. The SWPPP shall include but will not be limited to the following elements: • Temporary erosion control measures shall be employed for disturbed areas. • Specific measures shall be identified to protect the onsite open drainages during construction of the proposed project. • No disturbed surfaces shall be left without erosion control measures in place during the winter and spring months.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	• Sediment shall be retained onsite by a system of sediment basins, traps, or other appropriate measures. • The construction contractor shall prepare Standard Operating Procedures for the handling of hazardous materials on the construction site to eliminate or reduce discharge of materials to storm drains. • BMP performance and effectiveness shall be determined either by visual means where applicable (e.g., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination (such as inadvertent petroleum release) is required by the RWQCB to determine adequacy of the measure. • In the event of significant construction delays or delays in final landscape installation, native grasses or other appropriate vegetative cover shall be established on the construction site as soon as possible after disturbance, as an interim erosion control measure throughout the wet season.	
Impact HYD-2: Operational activities associated with the proposed project have the potential to degrade water quality in downstream water bodies.	**MM HYD-2:** Prior to the issuance of building permits, the project applicant shall submit a stormwater quality control plan to the City of Manteca for review and approval. The plan shall include a detailed drainage plan and identify expected, site-specific pollutants and required measures to treat those pollutants before they reach the regional detention basins and, ultimately, the San Joaquin River. The approved measures shall be incorporated into the proposed project. The plan will describe monitoring and performance measures and standards required in order to ensure water quality is adequately protected during operation of the project area. Examples of stormwater pollution prevention measures and practices to be incorporated into the plan include but are not limited to: • Strategically placed bioswales and landscaped areas that promote percolation of runoff • Pervious pavement • Roof drains that discharge to landscaped areas • Trash enclosures with screen walls and roofs	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	• Stenciling on storm drains • Curb cuts in parking areas to allow runoff to enter landscaped areas • Rock-lined areas along landscaped areas in parking lots • Catch basins • Oil/water separators • Regular sweeping of parking areas and cleaning of storm drainage facilities	
Impact HYD-3: The proposed project would not deplete groundwater supplies or substantially interfere with groundwater recharge.	No mitigation is necessary.	Less than significant impact.
Impact HYD-4: The proposed project would increase impervious surface coverage, which may result in increased stormwater runoff volumes and peak flows.	**MM HYD-4:** Prior to the issuance of building or grading permits for the proposed project, the project applicant shall submit a drainage plan for the project as a whole to the City of Manteca for review and approval. The plan shall include a detailed drainage plan that demonstrates attainment of pre-project runoff requirements prior to release at the outlet canal and describes the volume reduction measures and treatment controls used to reach attainment. The drainage plan shall identify all expected flows from the project area and the location, size, and type of facilities used to retain and treat the runoff volumes and peak flows to meet pre-project conditions. The Drainage Plan shall also include the geotechnical report verifying groundwater elevation for the regional basins. In addition, the plan shall address the need for subsurface drainage system located between the levee and the subdivision to control this water during a high water stage event. The approved drainage plan shall be incorporated into the proposed project.	Less than significant impact.
Impact HYD-5: The proposed project may place structures within a 100-year flood hazard area that may have the potential to divert flood flows or to be subjected to flood hazard.	**MM HYD-5a:** Prior to the issuance of grading permits, the project applicant must revisit the status of the provisionally accredited levees providing 100-year level of flood protection to the project area to determine it is still the case and the project site remains outside of the 100-year flood hazard. If development is proposed within a 100-year floodplain, the applicant shall revise project plans to raise all structures a minimum of 1 foot above the flood elevation.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	MM HYD-5b: Prior to the issuance of grading permits, the project applicant shall either demonstrate that the developed portions of the project site are outside of the anticipated 200-year flood hazard area or incorporate measures into the proposed project to achieve a 200-year level of flood protection for any site installations.	
Impact HYD-6: The proposed project may 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.	Implement Mitigation Measure HYD-4.	Less than significant impact.
Section 3.9 – Land Use		
Impact LU-1: The proposed project would not physically divide an established community.	No mitigation is necessary.	Less than significant impact.
Impact LU-2: The proposed project would be consistent with applicable provisions of the City of Manteca General Plan.	No mitigation is necessary.	Less than significant impact.
Impact LU-3: The proposed project would be consistent with the applicable provisions of the Manteca Municipal Code.	No mitigation is necessary.	Less than significant impact.
Impact LU-4: The proposed project may not be consistent with the applicable policies of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.	Implement Mitigation Measure BIO-6.	Less than significant impact.
Section 3.10 – Noise		
Impact NOI-1: Construction activities associated with the proposed project may expose nearby land uses to excessive noise levels.	**MM NOI-1:** During construction activities for the proposed project, the applicant shall require its construction contractors to adhere to the following noise attenuation requirements: • Construction activities shall be limited to the hours between 7 a.m. to 8 p.m. daily. The City of Manteca Director of Public Works shall have the discretion to permit construction activities to occur outside of allowable hours if compelling circumstances warrant such an exception (e.g.,	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	weather conditions necessary to pour concrete). • All construction equipment shall use noise-reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. If no noise-reduction features were installed by the manufacturer, then the contractor shall require that at least a muffler be installed on the equipment. • Construction staging and heavy equipment maintenance activities shall be performed a minimum distance of 300 feet from the nearest residence, unless safety or technical factors take precedence (e.g., an equipment breakdown). • A 10-foot-high construction noise barrier shall be installed along the edge of the project site within 300 feet of any offsite residence prior to start of grading activities. The noise barrier shall either be constructed of a minimum 0.5-inch plywood or utilize acoustical blankets with a minimum Sound Transmission Class of 12. The barrier shall remain in place until noise intensive aspects of construction are completed.	
Impact NOI-2: Construction and operational activities associated with the proposed project would not generate substantial groundborne vibration.	No mitigation is necessary.	Less than significant impact.
Impact NOI-3: The proposed project's vehicular trips would cause a substantial permanent increase in ambient noise levels.	No feasible mitigation is available.	Significant unavoidable impact.
Impact NOI-4: The proposed project may expose sensitive receptors to mobile noise levels that cause significant impacts.	**MM NOI-4:** Prior to issuance of building permits for any residential units that adjoin Woodward Avenue, the project applicant shall prepare and submit plans to the City of Manteca that identify the following noise attenuation features: • Single Family Dwelling Units: A minimum 7-foot high masonry wall shall be provided between Woodward Avenue and any proposed single-family residential units. The wall shall be of high quality design. • Multi-Family Dwelling Units: One or more of the following measures shall be implemented:	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	- A 4-foot high landscaped berm along Woodward Avenue - Locate the dwelling units a minimum of 140 feet away from the Woodward Avenue centerline - Orient any private outdoor living spaces (e.g., patios, balconies, decks, etc.) away from Woodward Avenue.	
Impact NOI-5: The proposed project would not generate stationary noise levels that cause significant impacts at nearby receptors.	**MM NOI-5:** During project operations, the project applicant shall limit outdoor activities at the clubhouse to the hours of 7 a.m. to 10 p.m. Indoor activities are permitted between 10 p.m. and 7 a.m. Signage shall be posted at the clubhouse advising users of this restriction.	Less than significant impact.
Section 3.11 – Population and Housing		
Impact POP-1: The proposed project would not directly or indirectly induce substantial population growth.	No mitigation is necessary.	Less than significant impact.
Impact POP-2: The proposed project would not displace substantial numbers of houses and people and would not necessitate the construction of replacement housing elsewhere.	No mitigation is necessary.	Less than significant impact.
Section 3.12 – Public Services and Utilities		
Impact PSU-1: The proposed project may contribute to a need for new or expanded fire protection facilities.	**MM PSU-1:** Prior to issuance of building permits, the project applicant shall provide the City of Manteca will all applicable fire protection development fees in accordance with the latest adopted fee schedule.	Less than significant impact.
Impact PSU-2: The proposed project would not contribute to a need for new or expanded police protection facilities.	No mitigation is necessary.	Less than significant impact.
Impact PSU-3: The proposed project may result in the need for new or expanded school facilities over and above those already planned.	**MM PSU-3:** Prior to issuance of building permits, the project applicant shall provide the Manteca Unified School District with all applicable school development fees in accordance with the latest adopted fee schedule. The applicant shall submit a receipt to the City of Manteca prior to issuance of building permits verifying that all fees have been paid.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact PSU-4: The proposed project may necessitate the construction of new park or recreational facilities, or cause substantial physical deterioration of existing park and recreational facilities.	**MM PSU-4:** Prior to issuance of building permits, the project applicant shall provide the City of Manteca with all the applicable park development fees in accordance with the latest adopted fee schedule. The City shall have the discretion to provide the project applicant with fee credits for the provision of onsite park and recreational facilities, if deemed appropriate.	Less than significant impact.
Impact PSU-5: The proposed project may require the construction or expansion of library facilities over and above those already planned.	**MM PSU-5:** Prior to issuance of building permits, the project applicant shall provide the City of Manteca with all the applicable library development fees in accordance with the latest adopted fee schedule.	Less than significant impact.
Impact PSU-6: The proposed project may not be served with sufficient water supplies from existing entitlements and resources and may require the construction of new water treatment facilities.	**MM PSU-6a:** Prior to approval of the final map, the applicant shall identify the location of a new well with a minimum capacity of 1,287 gallons per minute. If located onsite, the final map shall depict the location of the well and necessary infrastructure. If located offsite, the applicant shall provide the City with fees equivalent to the full cost of site acquisition. The applicant shall either (1) construct the well in accordance with City standards or (2) provide the City with the fees equivalent to the full cost of construction of the well. The well and associated infrastructure shall be operational prior to issuance of the first certificate of occupancy for any dwelling unit. Final flow estimates and needed water system improvements shall be determined by the City of Manteca based on detailed construction plans, and water system modeling. **MM PSU-6b:** Prior to issuance of building permits, the applicant shall prepare and submit documentation to the City of Manteca for review and approval identifying a non-potable irrigation system that is separate from the potable water systems. The non-potable irrigation system shall use non-potable well water until recycled water is available, at which point it shall be converted to use recycled water. **MM PSU-6c:** Prior to issuance of building permits, the applicant shall prepare and submit documentation to the City of Manteca for review and approval identifying that all appropriate and feasible water conservation measures are incorporated into the proposed use(s). The approved measures shall be incorporated into the final development plans. Examples of water conservation measures include but are not limited to:	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	• Drought-tolerant landscaping or xeriscaping • Water efficient irrigation systems (drip irrigation, bubbler/soaker systems, hydrozones, evapotranspiration controllers, etc.)	
Impact PSU-7: The proposed project's effluent would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board and would not require the construction of new wastewater treatment facilities.	**MM PSU-7:** Prior to approval of the final map, the applicant shall identify the location and characteristics of a new sewer pump station and the alignment and characteristics of a new force main to an existing pump station necessary to serve the proposed project. The City shall review and approve the location, alignment, and characteristics of the pump station and force main. The applicant shall either (1) construct the pump station and force main or (2) provide the City with fees equivalent to the full cost of the improvements. The pump station and force main shall be operational prior to issuance of the first certificate of occupancy for any of the dwelling units.	Less than significant impact.
Impact PSU-8: The proposed project would not result require the construction of new downstream drainage facilities.	Implement Mitigation Measure HYD-4.	Less than significant impact.
Impact PSU-9: The proposed project may not be served by a landfill with adequate capacity or comply with federal, state, and local statutes and regulations related to solid waste.	**MM PSU-9a:** Prior to issuance of building permits, the project applicant shall retain a qualified contractor to perform construction and demolition debris recycling. Following the completion of construction activities, the project applicant shall provide documentation to the satisfaction of the City of Manteca demonstrating that construction and demolition debris was recycled. **MM PSU-9b:** Prior to issuance of final certificate of occupancy for each multi-family residential building, the project applicant shall install onsite recycling collection facilities. Such facilities shall be provided in centralized locations within enclosed facilities. Signage shall clearly identify accepted materials, and recycling collection vessels (i.e., dumpsters, receptacles, bins, toters, etc.) shall be distinctly different in appearance from solid waste collection vessels.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact PSU-10: The proposed project would not result in the inefficient, wasteful, or unnecessary use of energy.	No mitigation is necessary.	Less than significant impact.
Section 3.13 – Transportation		
Impact TRANS-1: The proposed project would generate new vehicle trips that would contribute to unacceptable traffic operations under Existing Plus Project Conditions.	**MM TRANS-1a:** Prior to issuance of building permits for each Master Plan use, the applicant shall pay all transportation-related fees in accordance with the latest adopted fee schedule at the time permits are sought. Such fees shall include but would not be limited to the City of Manteca Public Facilities Implementation Plan fee and the San Joaquin County Regional Transportation Impact Fee. **MM TRANS-1b:** The project applicant shall construct one or more of the following improvements when determined to be necessary by the City of Manteca. The applicant shall be credited for the cost of the improvements(s) against its Public Facilities Implementation Plan fee amount. • *Woodward Avenue/McKinley Avenue*: Implement one of the following improvement options: - Widen intersection to include a two-way left-turn lane on Woodward Avenue to accommodate eastbound and southbound left-turn movements. Construct channelized southbound right-turn lane with 250-foot receiving lane on westbound Woodward Avenue. With these improvements in place, operations would be restored to LOS C during the AM and PM peak hours; or - Construct Atherton Drive extension to Woodward Avenue prior to operations at the Woodward Avenue/McKinley Avenue intersection degrading to an unacceptable level. Operations are projected to degrade to unacceptable at approximately 70 percent of project buildout This new road construction would divert all trips away from the Woodward Avenue/McKinley Avenue intersection, thereby no longer requiring the need for any improvements. If the City decides this improvement will be warranted because of uncertainties regarding the timing of the Atherton Drive extension, it would become the applicant's responsibility.	Significant unavoidable impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	• *Atherton Drive/Airport Way*: Install traffic signal and restripe northbound approach to include one left-turn lane, one through lane, and one shared through/right lane. Restripe northbound Airport Way north of Atherton Drive to include a second travel lane to the SR-120 eastbound ramps intersection. With this improvement in place, operations would be restored to LOS A during the AM peak hour and LOS B during the PM peak hour. • *Woodward Avenue/Airport Way*: Install traffic signal and widen intersection to include exclusive left-turn lane and shared through/right lane on eastbound, westbound, and northbound approaches. Widen southbound approach to include exclusive left, through, and right-turn lanes and operate right-turn lane with overlap arrow. With this improvement in place, operations would be restored to LOS B during the AM peak hour and LOS C during the PM peak hour.	
Impact TRANS-2: The proposed project would generate new vehicle trips that would contribute to unacceptable traffic operations under Cumulative Conditions.	**MM TRANS-2:** Prior to issuance of the first building permit, the project applicant shall provide the City of Manteca with proportionate-share fees for the following improvements to the SR-120/Airport Way and SR-120/Yosemite Avenue interchanges if there is an agreement in place between the City and Caltrans for improvements to these facilities. The City of Manteca shall transfer the collected fees to Caltrans in accordance with the agreement. • SR-120/Airport Way Interchange (Applicant's proportionate share: 7.1 percent) - Construct loop on-ramps. - Widen overcrossing to include two northbound and three southbound lanes - Widen SR-120 EB and WB off-ramps to include two left-turn lanes and two right-turn lanes. - Restripe the SB approach at the Airport Way/Daniels Street intersection to add a third through lane and restripe the NB approach to add an exclusive right-turn lane. - Restripe the EB Daniels Street approach to include left, shared left/through, and two right-turn lanes with right-turn overlap phasing.	Significant unavoidable impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	• SR-120/Yosemite Avenue Interchange (Applicant's proportionate share: 2.8 percent) - Install all-way stop at SR-120 EB Ramps/Yosemite Avenue intersection. - Widen westbound off-ramp to include channelized "free" right-turn lane. - Widen southbound Yosemite Avenue approach to include exclusive right-turn lane.	
Impact TRANS-3: The proposed project may substantially increase hazards that are due to a design feature or incompatible uses.	**MM TRANS-3a:** Prior to recordation of the final map, the project applicant shall redesign the horizontal curve on Woodward Avenue in the northwest quadrant of the project to have a radius of at least 180 feet, which would increase its design speed from 15 mph to 25 mph. **MM TRANS-3b:** Prior to recordation of the final map, the project applicant shall make the following changes, which shall be reflected on the map and the conditions of approval. The applicant is responsible for the full cost of the changes outlined below. • Relot Unit 6C so that residential lots do not front onto Trails Loop Road directly west of Tara Park Avenue, which is projected to carry approximately 4,000 average daily trips and may experience moderate queues as vehicles wait to turn onto Tara Park Avenue. • A traffic signal shall be installed at the Woodward Avenue/Atherton Drive Extension/Tara Park Avenue intersection prior to opening day. • Stop-control with full access shall be installed at Trails Loop Road and E Street approaches to Tara Park Avenue prior to opening day. • To accommodate future development of Tara Park, the segment of Tara Park Avenue between Woodward Avenue and Trails Loop Road shall be a minimum of two travel lanes in each direction. Exclusive southbound left-turn lanes shall be installed to provide ingress to Tara Park. • Install traffic circles, speed tables, speed legends, chicanes, and/or other approved traffic calming devices along the easterly 0.6-mile segment of Trails Loop Road prior to opening day.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	• The dimensions and configurations of the onsite traffic circles shall be verified with the City staff to determine that they can accommodate trucks and school buses. In addition, the adequacy of sight distance on residential streets that intersect Trails Loop Road shall be confirmed. Necessary revisions shall be reflected on the map. **MM TRANS-3c:** After issuance of the first certificate of occupancy for the first dwelling unit, the City of Manteca, in conjunction with the County of San Joaquin and the California Public Utilities Commission, shall monitor operations and safety at the McKinley Avenue grade crossing with the Union Pacific Oakland Subdivision to determine whether additional safety improvements are warranted. Such safety improvements would consist of the installation of a raised roadway median on both approaches to discourage wrong-way travel when the gates have been activated. The project applicant shall front the full cost of this improvement in advance of the issuance of the first certificate of the occupancy, which the City of Manteca shall hold in escrow until monitoring determines that the raised median is necessary. The project applicant's financial obligation for the cost of the median may be reduced to the extent other funding sources (e.g., Measure K or Section 130) become available. At the time the safety improvements are determined to be warranted, the City of Manteca shall coordinate with agencies with jurisdiction over the McKinley Avenue grade crossing to install the improvements.	
Impact TRANS-4: The proposed project may result in inadequate emergency vehicle access.	**MM TRANS-4:** Prior to approval of the final map, the project applicant shall identify a temporary emergency vehicle access (EVA) to the proposed project. The temporary EVA shall provide access from the east and be maintained until a second permanent roadway connection is established (e.g., Woodward Avenue after the Atherton Drive extension). The temporary EVA alignment shall be suitable for use by large emergency vehicles (e.g., fire engines) and be reviewed and approved by the City of Manteca. The temporary EVA shall be established prior to the issuance of the first certificate of occupancy for any dwelling units.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact TRANS-5: The proposed project may not provide adequate access for public transit, bicycles, and pedestrians.	**MM TRANS-5a:** Prior to approval of the final map, the applicant shall identify suitable locations for bus stops as required by the City of Manteca. Such stops may be located along the project frontage with E. Woodward Avenue or within the project boundaries. All stops shall include, at a minimum, a turn-out, seating, transit information, and connection to a sidewalk or comparable pedestrian facility to nearby uses. **MM TRANS-5b:** Prior to approval of the final improvement plans, the applicant shall depict bicycle facilities along the Woodward Avenue frontage with the proposed project in accordance with planned improvements in the latest version of the City's Bikeway Master Plan. **MM TRANS-5c:** Prior to issuance of building permits, the applicant shall demonstrate that each dwelling unit (single-family and multi-family) provides enclosed space suitable for storage of at least two bicycles. Such enclosed space may consist of garages, storage rooms, closets, or other non-living area spaces that allow the occupant(s) to securely store a bicycle and avoid exposure to theft or adverse weather conditions.	Less than significant impact.
Impact TRANS-6: Construction activities associated with the proposed project may result in delays on surrounding streets.	**MM TRANS-6:** Prior to the commencement of construction activities, the project applicant shall prepare and submit a Construction Traffic Control Plan for review and approval by the City of Manteca. The plan shall identify routing for all delivery and haul trucks and, if necessary, limit deliveries to non-peak times. To the extent feasible, truck routing should avoid or minimize travel through residential areas. The plan shall also identify suitable locations for construction worker parking.	Less than significant impact.

SECTION 1: INTRODUCTION

1.1 - Overview of the CEQA Process

This Draft Environmental Impact Report (Draft EIR) is prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the implementation of The Trails of Manteca Project (State Clearinghouse No. 2010072042). This document is prepared in conformance with CEQA (California Public Resources Code, Section 21000, et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000, et seq.). This Draft EIR is intended to serve as an informational document for the public agency decision makers and the public regarding the proposed project.

1.1.1 - Overview

The proposed project consists of development of 1,650 dwelling units of various densities and types on the project site. Housing units would include 1,178 single-family residences, 192 townhomes/ garden apartments, and 280 apartments. The project would incorporate a trail system throughout the site of over 12 miles that will eventually connect to the City facilities. Section 2, Project Description provides a complete description of the project.

1.1.2 - Purpose and Authority

This Draft EIR provides a project-level analysis of the environmental effects of The Trails of Manteca. The environmental impacts of the proposed project are analyzed in the EIR to the degree of specificity appropriate, in accordance with CEQA Guidelines Section 15146. This document addresses the potentially significant adverse environmental impacts that may be associated with the planning, construction, or operation of the project. It also identifies appropriate and feasible mitigation measures and alternatives that may be adopted to significantly reduce or avoid these impacts.

CEQA requires that an EIR contain, at a minimum, certain specific elements. These elements are contained in this Draft EIR and include:

- Table of Contents
- Introduction
- Executive Summary
- Project Description
- Environmental Setting, Significant Environmental Impacts, and Mitigation Measures
- Cumulative Impacts
- Significant Unavoidable Adverse Impacts
- Alternatives to the Proposed Project
- Growth-Inducing Impacts

- Effects Found Not To Be Significant
- Areas of Known Controversy

1.1.3 - Lead Agency Determination

The City of Manteca is designated as the lead agency for the project. CEQA Guidelines Section 15367 defines the lead agency as ". . . the public agency, which has the principal responsibility for carrying out or approving a project." Other public agencies may use this Draft EIR in the decision-making or permit process and consider the information in this Draft EIR along with other information that may be presented during the CEQA process.

This Draft EIR was prepared by Michael Brandman Associates, an environmental consultant under contract to the City of Manteca. Prior to public review, it was extensively reviewed and evaluated by the City of Manteca. This Draft EIR reflects the independent judgment and analysis of the City of Manteca as required by CEQA. Lists of organizations and persons consulted and the report preparation personnel are provided in Section 8 of this Draft EIR.

1.2 - Scope of the EIR

This Draft EIR addresses the potential environmental effects of the proposed project. The City of Manteca issued a Notice of Preparation (NOP) for the proposed project on July 15, 2010, which circulated between July 15, 2010 and August 13, 2010 for the statutory 30-day public review period. The scope of this Draft EIR includes the potential environmental impacts identified in the NOP and issues raised by agencies and the public in response to the NOP. The NOP is contained in Appendix A of this Draft EIR.

Nine comment letters were received in response to the NOP. They are listed in Table 1-1 and provided in Appendix A of this Draft EIR.

Table 1-1: NOP Comment Letters

Status	Affiliation	Signatory	Date
Public Agencies	California Department of Transportation, District 10	Tom Dumas, Chief, Office of Metropolitan Planning	July 20, 1010
	San Joaquin Valley Air Pollution Control District	David Warner, Director of Permit Services; Arnaud Marjollet, Permit Services Manager	July 22, 1010
	United States Army Corp of Engineers, Sacramento District	Kathleen A Dadey, Ph.D., Chief, California Delta Branch	August 3, 2010
	Department of California Highway Patrol	J.E. Dial, Commander, Stockton Area	August 8, 2010

Table 1-1 (cont.): NOP Comment Letters

Status	Affiliation	Signatory	Date
Public Agencies (*cont.*)	California Department of Toxic Substances and Control	Tim Miles, Hazardous Substances Scientist	August 9, 2010
	San Joaquin County Environmental Health Department	Rodney Estrada, Lead Senior Registered Environmental Health Specialist	August 12, 2010
	Reclamation District 2096	Chuck McCabe	August 13, 2010
	San Joaquin Council of Governments	Laura Brunn, Associate Regional Planner	August 16, 2010
Private Parties	—	Robert and Eileen Young	August 13, 2010
Source: City of Manteca, 2010			

1.2.1 - Scoping Meeting

Pursuant to CEQA Guidelines Section 15082(c)(1), the City of Manteca held a scoping meeting for the proposed project on Tuesday, August 10, 2010 at Manteca City Hall, as part of a Planning Commission meeting. Two speakers provided oral comments and are listed below.

- Kirk Dall, Planning Commissioner
- Eric Hayes, Planning Commissioner

1.2.2 - Environmental Issues Determined Not To Be Significant

The NOP identified topical areas that were determined not to be significant. An explanation of why each area is determined not to be significant is provided in Section 7, Effects Found Not To Be Significant. These topical areas are as follows:

- Mineral Resources

In addition, certain subjects with various topical areas were determined not to be significant. Other potentially significant issues are analyzed in these topical areas; however, the following issues are not analyzed:

- State Scenic Highways (Section 3.1, Aesthetics Light, and Glare)
- Forest Land Zoning (Section 3.2, Agricultural Resources)
- Forest Lands (Section 3.2, Agricultural Resources)
- Septic and Alternative Wastewater Disposal Systems (Section 3.6, Geology, Soils, and Seismicity)
- Airports (Section 3.7, Hazards and Hazardous Materials)
- Private Airstrips (Section 3.7, Hazards and Hazardous Materials)
- Wildland Fires (Section 3.7, Hazards and Hazardous Materials)

- Seiche, Tsunami, or Mudflow Hazards (Section 3.8, Hydrology and Water Quality)
- Aviation Noise (Section 3.10, Noise)
- Air Traffic Patterson (Section 3.13, Transportation)

An explanation of why each issue is determined not to be significant is provided in Section 7, Effects Found Not To Be Significant.

Potentially Significant Environmental Issues

The NOP found that the following topical areas may contain potentially significant environmental issues that will require further analysis in the EIR. These sections are as follows:

- Aesthetics, Light, and Glare
- Agricultural Resources
- Air Quality/Greenhouse Gases
- Biological Resources
- Cultural Resources
- Geology, Soils, and Seismicity
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Population and Housing
- Public Services and Utilities
- Transportation

1.3 - Organization of the EIR

This Draft EIR is organized into the following main sections:

- **Section ES: Executive Summary.** This section includes a summary of the proposed project and alternatives to be addressed in the Draft EIR. A brief description of the areas of controversy and issues to be resolved, in addition to a table that summarizes the impacts, mitigation measures, and level of significance after mitigation, are also included in this section.
- **Section 1: Introduction.** This section provides an introduction and overview describing the purpose of this Draft EIR, its scope and components, and its review and certification process.
- **Section 2: Project Description.** This section includes a detailed description of the proposed project, including its location, site, and project characteristics. A discussion of the project objectives, intended uses of the Draft EIR, responsible agencies, and approvals that are needed for the proposed project are also provided.
- **Section 3: Environmental Impact Analysis.** This section analyzes the environmental impacts of the proposed project. Impacts are organized into major topic areas. Each topic area includes a description of the environmental setting, methodology, significance criteria, impacts, mitigation measures, and significance after mitigation. The specific environmental topics that are addressed within Section 3 are as follows:

- **Section 3.1 – Aesthetics, Light, and Glare:** Addresses the potential visual impacts of development intensification and the overall increase in illumination produced by the project.
- **Section 3.2 – Agricultural Resources:** Addresses the potential conversion of Important Farmland to non-agricultural use, as well as conflicts with Williamson Act contracts and agricultural zoning.
- **Section 3.3 – Air Quality/Greenhouse Gas Emissions:** Addresses the potential air quality impacts associated with project implementation, as well as consistency with adopted air quality plans. In addition, the section evaluates project emissions of greenhouse gases.
- **Section 3.4 – Biological Resources:** Addresses the project's potential impacts on habitat, vegetation, and wildlife; the potential degradation or elimination of important habitat; and impacts on listed, proposed, and candidate threatened and endangered species.
- **Section 3.5 – Cultural Resources:** Addresses potential impacts of project development on known historical resources and potential archaeological and paleontological resources.
- **Section 3.6 – Geology, Soils, and Seismicity:** Addresses the potential impacts the project may have on soils and assesses the effects of project development in relation to geologic and seismic conditions.
- **Section 3.7 – Hazards and Hazardous Materials:** Addresses the potential for the presence of hazardous materials or conditions on the project site and in the project area that may have the potential to impact human health.
- **Section 3.8 – Hydrology and Water Quality:** Addresses the potential impacts of the project on local hydrological conditions, including drainage areas, and changes in the flow rates.
- **Section 3.9 – Land Use:** Addresses the potential land use impacts associated with development of a vacant land and consistency with the City of Manteca General Plan, the Manteca Municipal Code, and the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.
- **Section 3.10 – Noise:** Addresses the potential noise impacts during construction and at project buildout from mobile and stationary sources. The section also addresses the impact of noise generation on neighboring uses.
- **Section 3.11 – Population and Housing:** Addresses the potential to induce substantial population growth, displace substantial numbers of existing housing, and to displace substantial numbers of people that would require the construction of housing in another location.
- **Section 3.12 – Public Services and Utilities:** Addresses the potential impacts upon service providers, including fire protection, police protection, schools, parks, libraries, water supply, wastewater, storm drainage, solid waste, and energy providers.

- **Section 3.13 – Transportation:** Addresses the impacts on the local and regional roadway system, public transportation, bicycle, and pedestrian access.

- **Section 4: Cumulative Effects.** This section analyzes the proposed project's environmental impacts in combination with the impact of other, past, present, and probable future projects.
- **Section 5: Alternatives to the Proposed Project.** This section compares the impacts of the proposed project with three land-use project alternatives: the No Project Alternative, the Reduced Density Alternative, and the Single-Family Residential Alternative. An environmentally superior alternative is identified. In addition, alternatives initially considered but rejected from further consideration are discussed.
- **Section 6: Other CEQA Considerations.** This section provides a summary of significant environmental impacts, including unavoidable and growth-inducing impacts. In addition, the proposed project's energy demand is discussed.
- **Section 7: Effects Found Not To Be Significant.** This section contains analysis of the topical sections not addressed in Section 3.
- **Section 8: Organizations and Persons Consulted/List of Preparers.** This section contains a full list of persons and organizations that were consulted during the preparation of this Draft EIR, as well as the authors who assisted in the preparation of the Draft EIR, by name and affiliation.
- **Section 9: References.** This section contains a full list of references that were used in the preparation of this Draft EIR.
- **Appendices:** This section includes all notices and other procedural documents pertinent to the Draft EIR, as well as all technical material prepared to support the analysis.

1.4 - Documents Incorporated by Reference

As permitted by CEQA Guidelines Section 15150, this Draft EIR has referenced several technical studies, analyses, and previously certified environmental documentation. Information from the documents, which have been incorporated by reference, has been briefly summarized in the appropriate section(s). The relationship between the incorporated part of the referenced document and the Draft EIR has also been described. The documents and other sources that have been used in the preparation of this Draft EIR include, but are not limited to:

- City of Manteca General Plan
- Manteca Municipal Code
- City of Manteca 2005 Urban Water Management Plan
- San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

These documents are specifically identified in Section 9, References, of this Draft EIR. In accordance with CEQA Guidelines Section 15150(b), the General Plan, the Municipal Code, and the referenced documents and other sources used in the preparation of the Draft EIR are available for review at the City of Manteca at the address shown in Section 1.6 below.

1.5 - Documents Prepared for the Project

The following technical studies and analyses were prepared for the proposed project:

- Agricultural Land Conversion Model, prepared by Michael Brandman Associates (Appendix B)
- Air Quality Analysis, prepared by Michael Brandman Associates. (The analysis is wholly contained in Section 3.3, Air Quality; modeling data is provided in Appendix C.)
- Archaeological Resources Assessment for Feasibility Study, prepared by Basin Research (Appendix E)
- Geotechnical Investigation, prepared by Terrasearch, Inc. (Appendix F)
- Phase I and Limited Phase II Environmental Site Assessments, prepared by Terrasearch, Inc. (Appendix G)
- Levee Seepage Evaluation, prepared by Engeo, Inc. (Appendix H)
- Noise Analysis, prepared by Michael Brandman Associates. (The analysis is wholly contained in Section 3.10, Noise; modeling data is provided in Appendix I.)
- Water Supply Assessment, prepared by City of Manteca (Appendix J)
- Transportation Impact Study, prepared by Fehr and Peers (Appendix K)

1.6 - Review of the Draft EIR

Upon completion of the Draft EIR, the City of Manteca filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the public review period (Public Resources Code, Section 21161). Concurrent with the NOC, this Draft EIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with Public Resources Code 21092(b)(3). During the public review period, the Draft EIR, including the technical appendices, is available for review at the City of Manteca. The address for each location is provided below.

City of Manteca
Community Development Department
1001 W. Center Street
Manteca, CA 95337
Hours:
Monday-Thursday 7:30 a.m. to 5:00 p.m.
Friday 8:00 a.m. to 5:00 p.m.
(Closed every alternating Friday thereafter)

Stockton-San Joaquin County Public Library
Manteca Branch Library
320 W. Center Street
Manteca, CA 95336-4539
Hours:
Monday, Wednesday: 11 a.m. to 7 p.m.
Tuesday, Thursday: 10 a.m. to 6 p.m.
Friday: 12 p.m. to 5 p.m.
Saturday: 10 a.m. to 4 p.m.

Agencies, organizations, and interested parties have the opportunity to comment on the Draft EIR during the 45-day public review period. Written comments on this Draft EIR should be addressed to:

Ms. Erika Durrer, Senior Planner
City of Manteca
Community Development Department
1001 W. Center Street
Manteca, CA 95337
Phone: (209) 456-8522
Fax: (209) 923-8949
Email: edurrer@ci.manteca.ca.us

Submittal of electronic comments in Microsoft Word or Adobe PDF format is encouraged. Upon completion of the public review period, written responses to all significant environmental issues raised will be prepared and made available for review by the commenting agencies at least 10 days prior to the public hearing before the City of Manteca on the project, at which the certification of the Final EIR will be considered. Comments received and the responses to comments will be included as part of the record for consideration by decision makers for the project.

SECTION 2: PROJECT DESCRIPTION

This Environmental Impact Report (EIR) analyzes the potential environmental effects of the proposed The Trails of Manteca project in Manteca, California.

2.1 - Project Location and Setting

2.1.1 - Location

The project site is located in the City of Manteca, San Joaquin County, California; refer to Exhibit 2-1. The project site consists of five parcels totaling 477 acres, bounded by E. Woodward Road (north), S. Woodward Avenue (west), vacant land to the east and the south; refer to Exhibit 2-2. The project site is located on the Lathrop, California, United States Geologic Survey 7.5-minute quadrangle, Township 2 South, Range 7 East, Unsectioned (Latitude: 37°46'05" North; 121°16'40" West). Photographs of the project site are provided in Exhibit 2-3a and Exhibit 2-3b.

Existing Conditions

The 477-acre project site contains agricultural uses. A dry levee that runs from S. Woodward Avenue east to Airport Way bisects the property. Approximately 300 acres lie north of the levee and the remaining 177 acres lie south of the levee. The levee is under the jurisdiction of Reclamation District 17.

The area north of the levee contains row crops, an almond orchard, and several structures. The structures are located approximately 300 feet west of the eastern project boundary and consist of several dilapidated agricultural and residential buildings, including a barn, a storage shed, a mobile home, and related buildings. Unpaved roads connect the structures with E. Woodward Avenue and the nearby fields and orchards. Irrigation ditches lie along E. Woodward Avenue and S. Woodward Avenue and cross the property in several other locations.

The area south of the levee contains row crops, unpaved roads, and irrigation ditches. No structures are located in this area.

The project site is mapped as containing 374.35 acres of "Prime Farmland" and 99.72 acres of "Farmland of Statewide Importance." Both designations fall under the "Important Farmland" umbrella as classified by the California Department of Conservation Farmland Mapping and Monitoring Program.

The project site is encumbered by an active Williamson Act contract that dates to 1976. The property owner filed a Notice Non-Renewal in November 2005 to initiate termination of the contract. The property owner subsequently filed a Petition for Cancellation of Contract with the City of Manteca in March 2009.

2.1.2 - Surrounding Land Uses

West

S. Woodward Avenue, a two-lane undivided roadway, forms the western boundary of the project site. Land uses further to the west of S. Woodward Avenue include the Islander Mobile Home Park, Weatherbee Lake, and several single-family dwelling units.

North

The project site is bounded by E. Woodward Avenue, a two-lane undivided roadway, to the north. Land uses north of E. Woodward Avenue include the Oakwood Shores single-family residential development (which occupies the former Manteca Waterslides site) and agricultural uses consisting of row crops.

East

Agricultural uses consisting of row crops are located to the east of the project site.

South

Agricultural uses and Walthall Slough, a tributary to the San Joaquin River, form the southern boundary of the project site. Land uses further south include agricultural uses consisting of row crops.

2.1.3 - Land Use Designations

The City of Manteca General Plan designates the project site as "Urban Reserve-Low density Residential" (UR-LDR), "Urban Reserve-Very Low Density Residential" (UR-VLDR), and "Open Space" (OS). The Manteca Zoning Ordinance designates the project site "Planned Employment Center (PEC)."

The project area is within the boundaries of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.

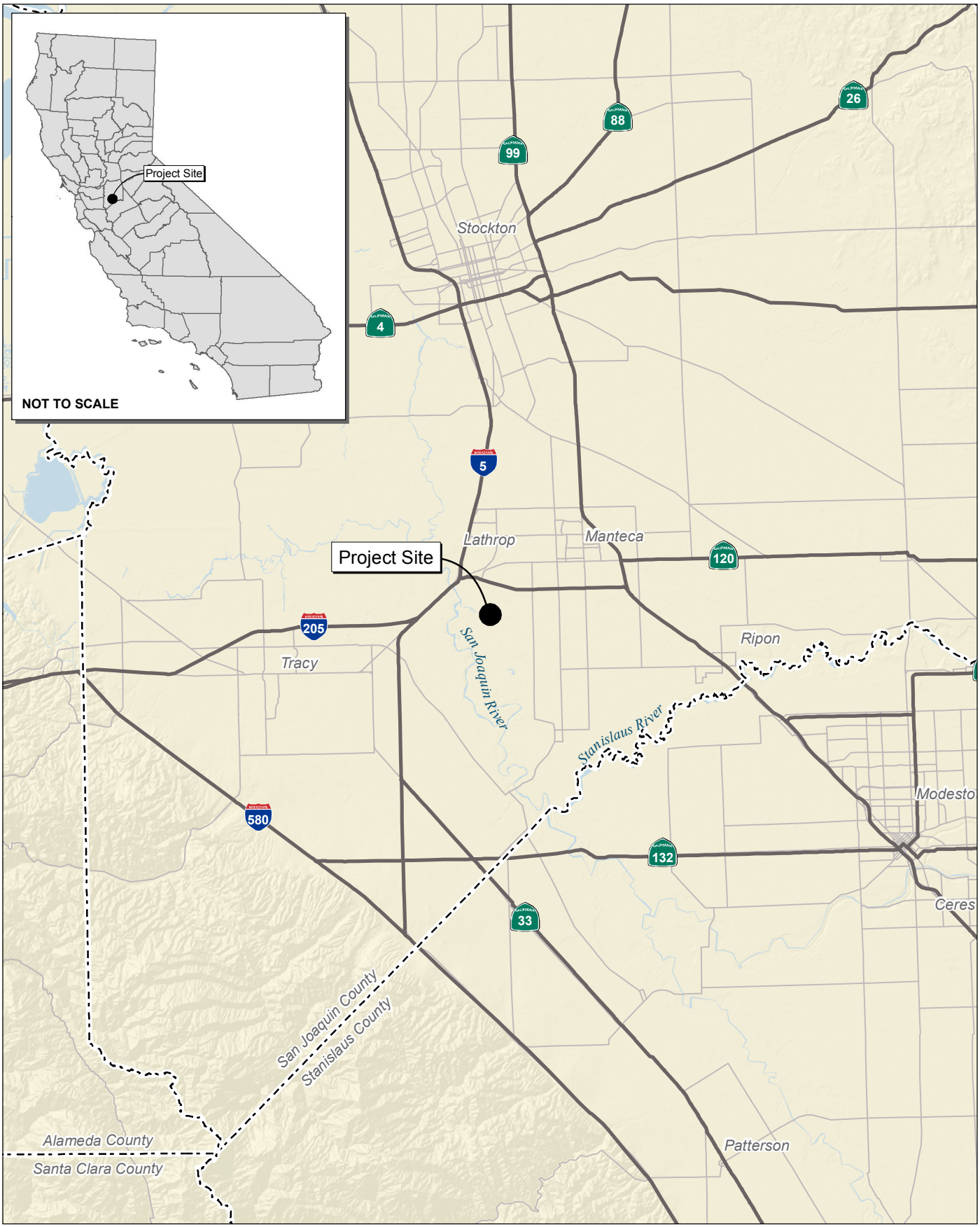
2.2 - Project Characteristics

The proposed project requires the approval of two land use designation changes in order to allow the development of the proposed residential uses. This section will first discuss the land use designation changes and then discuss the development characteristics.

2.2.1 - Proposed Land Use Designation Changes

The proposed project requires the following land use designation changes:

- A General Plan Amendment is proposed to change the land use designation from "Urban Reserve Very Low Density Residential," "Urban Reserve Low Density Residential," and "Open Space" to "Low Density Residential," "High Density Residential," and "Open Space."



Source: Census 2000 Data, The CaSIL, MBA GIS 2010.

NORTH

5 2.5 0 5 Miles

Michael Brandman Associates

Exhibit 2-1
Regional Location Map



Source: San Joaquin County NAIP, 2009. Dahlin Group Architecture Planning, July 2010.

Exhibit 2-2
Local Vicinity Map
Aerial Base

Michael Brandman Associates

NORTH

2,000 1,000 0 2,000 Feet



View of the project site from E. Woodward Avenue.



View of agricultural structures.



View of the almond orchard and corn field looking east.



View of the interior of the almond orchard.

Source: Michael Brandman Associates, 2010.

Michael Brandman Associates

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Exhibit 2-3a
Site Photographs



View of the corn field in the southeastern portion of the project site.



View of the project site looking north from the levee with Walthall Slough.



View of the agricultural fields south of the dry levee from S. Woodward Avenue.



View looking southeast from the dry levee that bisects the project site.

Source: Michael Brandman Associates, 2010.

Michael Brandman Associates

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Exhibit 2-3b
Site Photographs

- Rezoning of the project site from Planned Employment Center to Single-Family Residential (R-1), Multiple-Family Residential/Institutional (R-4), Open Space (O-S), with Planned Development overlay.

2.2.2 - Proposed Development and Land Use Activities

The proposed project would develop a planned residential community on the project site. The tentative map is shown in Exhibit 2-4. Each project component is described in detail.

Residential Uses

The proposed project would develop a variety of residential uses at various densities. Table 2-1 summarizes the residential uses. As shown in the table, 1,178 single-family residences, 192 townhomes/garden apartments, and 280 apartments would be developed.

Table 2-1: Residential Use Summary

Dwelling Unit Type	Count	Characteristics
Single-Family Residential	139	8.1 to 15 dwellings/acre
Single-Family Residential	136	3,600-square-foot lots
Single-Family Residential	279	4,250-square-foot lots
Single-Family Residential	157	4,500-square-foot lots
Single-Family Residential	182	5,000-square-foot lots
Single-Family Residential	97	5,500-square-foot lots
Single-Family Residential	104	6,300-square-foot lots
Single-Family Residential	84	6,500-square-foot lots
Single-Family Residential Subtotal	**1,178**	—
Townhomes/Garden Apartments	192	15.1 to 25 dwellings/acre
Apartments	280	15.1 to 25 dwellings/acre
Grand Total	**1,650**	—
Source: Weatherbee Properties, LLC, 2010.		

As shown in Exhibit 2-4, the highest density multi-family uses would be located along the north and east project boundaries, with gradual transition to the lowest density single-family uses located in the southern and southeastern portions of the project site.

Open Space and Recreational Amenities

The project would incorporate a trail system throughout the site of over 12 miles that will eventually connect to the City facilities. The proposed project also includes over 75 acres of linear parks and a clubhouse to be utilized by the residents.

Approximately 177 acres of the project site that lies south of the dry levee would not be developed and would remain in agricultural production.

Roadways and Vehicular Access

Onsite Roadways

The proposed project would have three access points from both E. Woodward Avenue and S. Woodward Road:

- **E. Woodward Avenue/Atherton Drive/Tara Park Avenue:** This signalized intersection would consist of E. Woodward Avenue (east and west legs), the planned extension of Atherton Drive (north leg), and Tara Park Avenue (south leg). Tara Park Avenue would provide access to the proposed project.
- **E. Woodward Avenue/Bella Lago Way/Trails Loop Road:** This unsignalized intersection would consist of E. Woodward Avenue (east and west legs), the existing Bella Lago Way (north leg), and Trails Loop Road (south leg). Trails Loop Road would provide access to the proposed project.
- **S. Woodward Avenue/Aplicella Court/West Project Access:** This unsignalized intersection would consist of S. Woodward Avenue (north and south legs), the existing Aplicella Court (west leg), and the west project access (south leg).

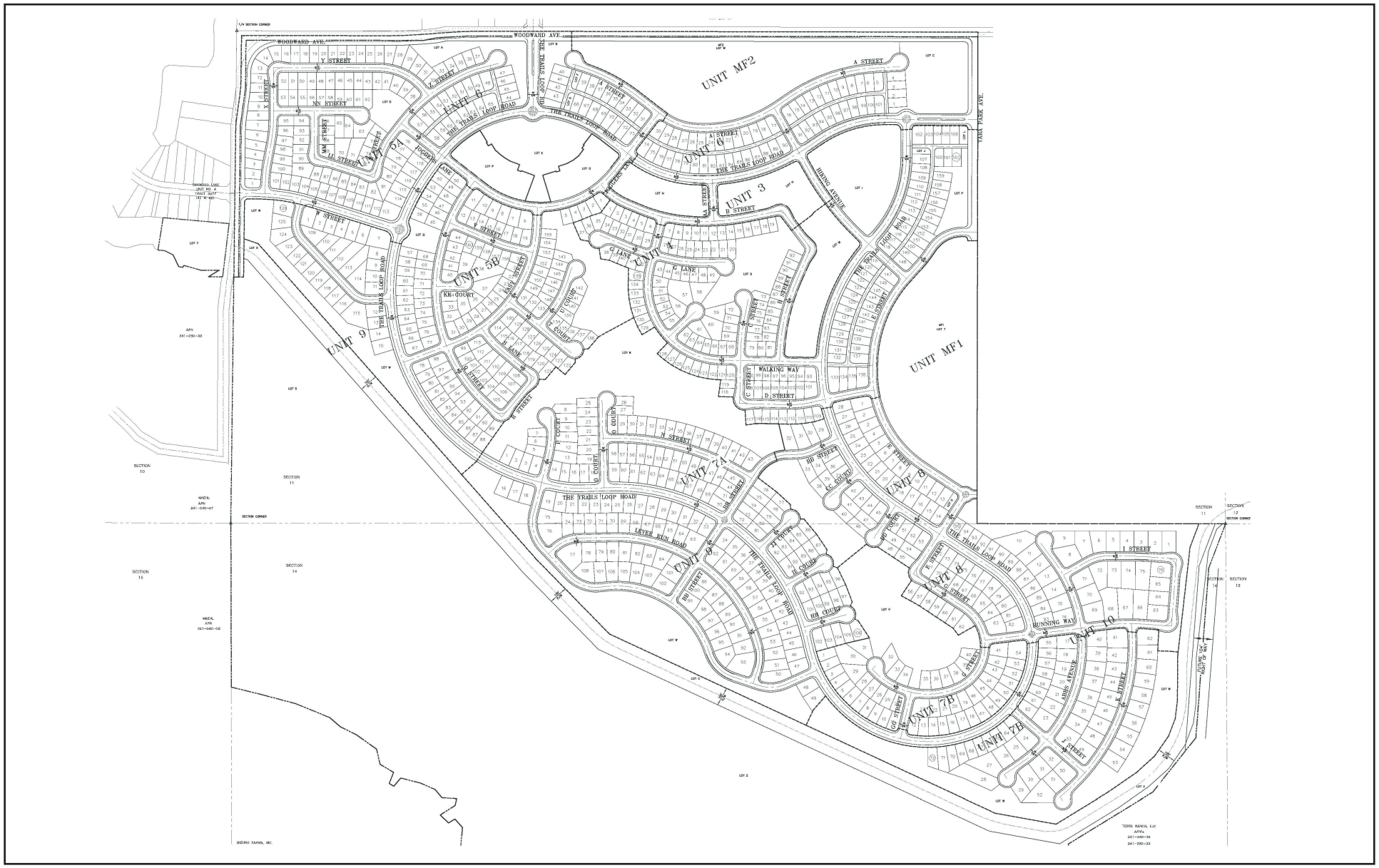
As shown in Exhibit 2-4, these access points would connect to an internal "loop road" (known as Trails Loop Road) that meanders through the project site. Smaller roads would branch off from the loop road to provide access to the various neighborhoods. Roundabouts are proposed at the major intersections along the loop road. No driveway access would be taken from Trails Loop Road.

Offsite Roadways

The City of Manteca plans to construct several new roadways and alter several existing roadways in the project vicinity. These roadway projects are independent of the proposed project, and the City is collecting fees for these improvements via its established Public Facilities Implementation Plan. The City will also undertake separate environmental review of these improvements. However, they are discussed here to provide context for the proposed project's onsite circulation system.

Atherton Drive Extension

Atherton Drive would be extended from its current terminus near State Route 120 (SR-120) to E. Woodward Avenue. Once constructed, the roadway would be located on the opposite leg of the main project access and, therefore, would serve as the primary thoroughfare to and from the project site.



Source: UDI-Tetrad Consulting Engineers, Inc., August 2010.

NORTH

800 400 0 800 Feet

Exhibit 2-4
Tentative Map

Michael Brandman Associates

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E. Woodward Avenue

After the Atherton Drive extension is completed, E. Woodward Avenue would remain in its current state until the property to the east of the project site is developed, at which point it would be removed. That project would ultimately provide new roadway connections to the proposed project (e.g., to the Main Access); however, because no development applications have been submitted to the City of Manteca for that property, no further details are available about potential connections.

McKinley Avenue Expressway

South of SR-120, McKinley Avenue would be realigned and upgraded to an expressway. The alignment would veer southeast from the current north-south alignment and ultimately connect with Airport Way. A new, full interchange at SR-120 would be constructed and would be expected to be the primary freeway access point for project-related traffic.

Half Width Improvements

Half-width improvements would be made to E. Woodward Avenue and S. Woodward Avenue along the project site frontage. The improvements would consist of improving both roadways to their General Plan-contemplated buildout section.

Emergency Vehicle Access

Until the Atherton Drive extension is completed, E. Woodward Avenue would be the only roadway serving the proposed project. In the event of emergency event (e.g., flood, fire, auto accident), E. Woodward Avenue could potentially be blocked, thereby preventing emergency responder access. As such, a temporary Emergency Vehicle Access (EVA) is proposed to be established between the project site and a point to the east. It is anticipated that the EVA alignment would follow the existing dry levee or unpaved agricultural roads to the planned Terra Ranch subdivision to the east, where it would link up to City streets. Refer to Section 3.13, Transportation for further discussion.

Utilities

Storm Drainage

An onsite storm drainage would be installed. The collection system would consist of inlets and subsurface piping. Runoff would be conveyed to onsite detention basis, which would regulate release into downstream waterways. From there, runoff would be released into Walthall Slough via an outfall and swale.

Water

Underground potable water pipelines would be extended to the project site. Potable water would be supplied by the City of Manteca.

Wastewater

Underground wastewater pipelines would be extended to the project site. Wastewater collection and treatment would be provided by the City of Manteca.

Electricity and Natural Gas

Underground electricity and natural gas lines would be extended to the project site from existing facilities within the E. Woodward Avenue right-of-way. Service would be provided by Pacific Gas and Electric Company (PG&E).

Telecommunications

Telecommunications would be extended to the project site from existing facilities within the E. Woodward Avenue right-of-way. Service would be provided by Verizon and Comcast.

Construction Activities

Grading

The developable portion of the project site would be mass-graded. As currently designed, the earthwork is balanced on the north side of the levee at approximately 730,000 cubic yards.

The only grading that will occur on the south side of the levee is a minimal amount necessary to construct an earthen swale from the storm drain outfall to Walthall Slough. A minor amount of grading associated with landscaping may occur in this area as well.

Tree Removal

The existing almond trees will be removed and hauled to the south side of the levee prior to the start of the mass grading operation. There, the trees will be cut up, chipped, and mixed into the native soil, where the wood will decompose naturally, adding nutrients to the farmland.

Phasing

The proposed project is anticipated to be constructed in multiple phases over a period of years. Actual phasing will depend on future market conditions, which are not know at the time of this writing.

For the purposes of conservatively evaluating project impacts, this EIR will assume that the entire project is constructed in one phase. Construction activities are assumed to occur in 2012 and the first full year of operations would be 2013.

2.2.3 - Williamson Act Contract Cancellation

The entire project site is encumbered by a Williamson Act Contract that dates to 1976. The property owner filed a Notice Non-Renewal in November 2005. The property owner subsequently filed a Petition for Cancellation of Contract with the City of Manteca in March 2009.

The proposed cancelation would pertain to the portion of the project site north of the dry levee that would support residential development. The portion of the project site south of the dry levee that would remain in agricultural production would remain encumbered by the Williamson Act Contract until it expires pursuant to the Notice of Non-Renewal.

Government Code Sections 51280 through 51283 set forth procedures for cancelling a Williamson Act contract. The property owner must pay a cancellation fee and the lead agency must make findings must be made justifying the cancellation.

Williamson Act contracts are further discussed in Section 3.2, Agricultural Resources.

2.3 - Project Objectives

The objectives of the proposed project are to:

- Promote economic growth through new capital investment, an expanded population base, and an expanded tax base.
- Provide new residential opportunities to accommodate forecasted population growth within the City of Manteca.
- Provide a diversity of housing choices in one development that would cater to various segments of the community.
- Develop land to its highest and best use within the City of Manteca city limits and primary urban service boundary.
- Provide a high-quality residential development project that offers recreational and open space amenities for residents.

2.4 - Intended Uses of This Draft EIR

This Draft EIR is being prepared by the City of Manteca to assess the potential environmental impacts that may arise in connection with actions related to implementation of the proposed project. Pursuant to CEQA Guidelines Section 15367, the City of Manteca is the lead agency for the proposed project and has discretionary authority over the proposed project and project approvals. The Draft EIR is intended to address all public infrastructure improvements and all future development that are within the parameters of the proposed project.

2.4.1 - Discretionary and Ministerial Actions

The project application would require the following discretionary approvals and actions, including:

- General Plan Amendment—City of Manteca
- Zone Change—City of Manteca
- Planned Development Adoption—City of Manteca
- Tentative Subdivision Map—City of Manteca
- Development Agreement—City of Manteca
- Williamson Act Contract Cancellation—City of Manteca

Certain ministerial actions would be required for the implementation of the proposed project including issuance of demolition, encroachment, grading, and building permits.

2.4.2 - Responsible and Trustee Agencies

A number of other agencies in addition to the City of Manteca will serve as Responsible and Trustee Agencies, pursuant to CEQA Guidelines Section 15381 and Section 15386, respectively. This Draft EIR will provide environmental information to these agencies and other public agencies, which may be required to grant approvals or coordinate with other agencies, as part of project implementation. These agencies may include but are not limited to the following.

- United States Army Corps of Engineers
- California Department of Fish and Game
- California Department of Transportation
- California Department of Conservation
- Central Valley Regional Water Quality Control Board
- San Joaquin Valley Air Pollution Control District
- San Joaquin County Environmental Health Department
- San Joaquin Council of Governments
- Reclamation District 17

Actions that are necessary to implement the project that must be taken by other agencies are:

- Obtain coverage under General Construction Stormwater Permit – State Water Resources Control Board/Central Valley RWQCB. A Storm Water Pollution Prevention Plan must be submitted in order to obtain such coverage.
- Issuance of Encroachment Permits for roadway improvements within facilities under the jurisdiction of the California Department of Transportation (Caltrans), the County of San Joaquin, or the City of Lathrop.
- Compliance with Air District Rule 9510 – San Joaquin Valley Air Pollution Control District.

SECTION 3: ENVIRONMENTAL IMPACT ANALYSIS

Organization of Issue Areas

This Draft Environmental Impact Report (Draft EIR) provides analysis of impacts for those environmental topics where it was determined in the Notice of Preparation issued on July 15, 2010, or through subsequent analysis that the proposed project would result in "potentially significant impacts." Sections 3.1 through 3.13 discuss the environmental impacts that may result with approval and implementation of the proposed project.

Issues Addressed in This EIR

The following environmental issues are addressed in Section 3:

- Aesthetics, Light, and Glare
- Agricultural Resources
- Air Quality/Greenhouse Gas Emissions
- Biological Resources
- Cultural Resources
- Geology, Soils, and Seismicity
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Population and Housing
- Public Services and Utilities
- Transportation

Each environmental issue area in Sections 3.1 through 3.13 contains a description of:

1. The environmental setting as it relates to the specific issue
2. The regulatory framework governing that issue
3. The methodology used in identifying the issues
4. The significance criteria
5. An evaluation of the project-specific impacts and identification of mitigation measures
6. A determination of the level of significance after mitigation measures are implemented

Level of Significance

Determining the severity of project impacts is fundamental to achieving the objectives of CEQA. CEQA Guidelines Section 15091 requires that decision makers mitigate, as completely as is feasible,

the significant impacts identified in the Final EIR. If the EIR identifies any significant unmitigated impacts, CEQA Guidelines Section 15093 requires decision makers in approving a project to adopt a statement of overriding considerations that explains why the benefits of the project outweigh the adverse environmental consequences identified in the EIR.

The level of significance for each impact examined in this Draft EIR was determined by considering the predicted magnitude of the impact against the applicable threshold. Thresholds were developed using criteria from the CEQA Guidelines and checklist; state, federal, and local regulatory schemes; local/regional plans and ordinances; accepted practice; consultation with recognized experts; and other professional opinions.

Impact Analysis and Mitigation Measure Format

The format adopted in this EIR to present the evaluation of impacts is described and illustrated below.

Summary Heading of Impact

Impact AES-1: **An impact summary heading appears immediately preceding the impact description (Summary Heading of Impact in this example). The impact abbreviation identifies the section of the report (AES for Aesthetics, Light, and Glare in this example) and the sequential order of the impact (1 in this example) within that section. To the right of the impact number is the impact statement, which identifies the potential impact.**

Impact Analysis

A narrative analysis follows the impact statement.

Significance Before Mitigation

This section identifies the level of significance of the impact before any mitigation is proposed.

Mitigation Measures

In some cases, following the impact discussion, reference is made to state and federal regulations and agency policies that would fully or partially mitigate the impact. In addition, policies and programs from applicable local land use plans that partially or fully mitigate the impact may be cited.

Project-specific mitigation measures, beyond those contained in other documents, are set off with a summary heading and described using the format presented below:

MM AES-1a Project-specific mitigation is identified that would reduce the impact to the lowest degree feasible. The mitigation number links the particular mitigation to the impact with which it is associated (**AES-1** in this example); the letter identifies the sequential order of that mitigation for that impact (**a** in this example).

Significance After Mitigation

This section identifies the resulting level of significance of the impact following mitigation.

Abbreviations used in the mitigation measure numbering are:

Code	Environmental Issue
AES	Aesthetics, Light, and Glare
AG	Agricultural Resources
AIR	Air Quality/Greenhouse Gas Emissions
BIO	Biological Resources
CUL	Cultural Resources
GEO	Geology, Soils, and Seismicity
HAZ	Hazards and Hazardous Materials
HYD	Hydrology and Water Quality
LU	Land Use
NOI	Noise
POP	Population and Housing
PSU	Public Services and Utilities
TRANS	Transportation

3.1 - Aesthetics, Light, and Glare

3.1.1 - Introduction

This section describes the existing aesthetics, light, and glare setting and potential effects from project implementation on visual resources and the site and its surroundings. Descriptions and analysis in this section are based on site reconnaissance by Michael Brandman Associates, as well as review of the City of Manteca General Plan and the proposed project.

3.1.2 - Environmental Setting

Aesthetic Character

Regional Setting

The City of Manteca is located in central San Joaquin County in the northern portion of the San Joaquin Valley near the Sacramento Delta. Manteca is characterized by flat relief and is at a relatively low elevation owing to its proximity to the delta. Land use in the Manteca area generally consists of urban uses within the city limits and agricultural and open space uses in the unincorporated county.

On particularly clear days, however, there are distant views of the Sierra Nevada Mountains to the east and the Coast Range to the west and southwest. Mt. Diablo, located approximately 35 miles to the west in Contra Costa County, is the most prominent topographic feature visible from Manteca.

The City of Manteca is the third-largest city in San Joaquin County with a population of 67,754. The City of Manteca has developed in a compact urban form around the historic downtown centered along Yosemite Avenue. Residential development in the past few decades has occurred in relatively compact neighborhoods defined by the established grid of major streets. Recent urban growth has occurred around the perimeter of the City, particularly in the northern and southern areas.

Project Site

The 477-acre project site contains agricultural uses. A dry levee that runs from S. Woodward Avenue east to Airport Way bisects the property. Approximately 300 acres lie north of the levee and the remaining 177 acres lie south of the levee. The levee is under the jurisdiction of Reclamation District 17.

The area north of the levee contains row crops, an almond orchard, and several structures. The structures are located approximately 300 feet west of the eastern project boundary and consist of several dilapidated agricultural and residential buildings, including a barn, a storage shed, a mobile home, and related buildings. Unpaved roads connect the structures with E. Woodward Avenue and the nearby fields and orchards. Irrigation ditches lie along E. Woodward Avenue and S. Woodward Avenue and cross the property in several other locations.

The area south of the levee contains row crops, unpaved roads, and irrigation ditches. No structures are located in this area.

Exhibits 2-3a and 2-3b provide photographs of the project area.

Surrounding Land Uses

Below is a description of surrounding land uses, including views from and of the project site. Photographs of surrounding land uses are provided in Exhibit 3.1-1.

West

S. Woodward Avenue, a two-lane undivided roadway, forms the western boundary of the project site. Land uses further to the west of S. Woodward Avenue include the Islander Mobile Home Park, Weatherbee Lake, and several single-family dwelling units.

Views of the Islander Mobile Home Park to the west are obstructed by moderately dense vegetation of trees and shrubbery along S. Woodward Avenue. Views of single-family rural dwelling units to the west are obstructed by existing orchards on the project site. Views of the project side from the west include orchards north of the levee and agricultural land south of the levee.

North

The project site is bounded by E. Woodward Avenue, a two-lane undivided roadway to the north. Land uses north of E. Woodward Avenue include the Oakwood Shores single-family residential development (which occupies the former Manteca Waterslides site) and agricultural uses consisting of row crops.

The views of Oakwood Lake, a few residences, and a large water storage tank facility (part of Oakwood Shores development) to the north are obstructed by the existing orchards. However, the project site has unobstructed views of the agricultural land to the north. State Route 120 (SR-120) is indistinctly visible further to the north. Land uses on the north side of the project site have mostly unobstructed views of the project site.

East

Agricultural uses consisting of row crops are located to the east of the project site.

The project site has unobstructed views of agricultural land uses to the east. The land uses on the east side have unobstructed views of the project site.



View of the Oakwood Shores residential development to the north.



View of the agricultural uses to the east.



View of Walthall Slough and the agricultural uses to the south.



View of the Islander Mobile Home Park to the west.

Source: Michael Brandman Associates, 2010.

Michael Brandman Associates

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Exhibit 3.1-1
Surrounding Land Uses

South

Agricultural uses and Walthall Slough, a tributary to the San Joaquin River, form the southern boundary of the project site. Land uses further south include agricultural uses consisting of row crops.

The views of Walthall Slough and agricultural fields to the south from the portion north of the levee are obstructed by the levee. Views from the portion south of the levee include views of Walthall Slough and associated vegetation, and intermittent views of the agricultural fields to the south. The levee obstructs views of the northern portion of the project site from the south, with the exception of crown of orchard trees.

Light and Glare

The project site consists of agricultural operations, and rural residences. The rural residences contain structures that emit sources of light and glare. However, given the scale of the existing structures and the surrounding agricultural land, this is not considered a substantial source. The structures on the project site are typically constructed with stucco or wood, which do not create a source of glare. Roof materials are wood or clay tiles, which would not create a significant reflective surface. Existing nighttime lighting sources near the site consist of streetlighting along S. Woodward Avenue, residential subdivision north, and mobile park community and rural residential houses to the west. Vehicles traveling along E. Woodward Road and S. Woodward Avenue are also sources of light and glare.

3.1.3 - Regulatory Framework

State

California Environmental Quality Act (CEQA)

CEQA affords protection for the environment, including aesthetic resources. The CEQA Guidelines provide four criteria that may be used to evaluate the significance of visual quality impacts: negative effects on a scenic vista, damage to scenic resources within a state scenic highway, degradation of the visual character or quality of a site and its surroundings, and creation of a new source of substantial light or glare affecting views.

Local

City of Manteca

General Plan

The City of Manteca General Plan established the following goals and policies related to aesthetics, light, and glare that are applicable to the proposed project:

- **Goal LU-8:** To reinforce strong urban design.
- **Policy LU-P-43**: The City shall promote the provision of both public and private open space within urbanized Manteca to provide visual contrast with the built-environment and to provide for the recreational needs of Manteca residents. Private open space shall not be considered for

public use, other than as visual open space, and shall not be constrained from other uses as identified in the General Plan, unless as provided for by agreement with the land owner.

- **Goal CD-1:** Retain the compact and cohesive community form of the City.
- **Policy CD-P-7:** The City shall implement neighborhood design standards in the Residential districts that contribute to the overall character of the neighborhood by emphasizing traditional residential features that enhance the sense of community, ensure a safe pedestrian orientation, and minimize the visual prominence of garages.
- **Goal CD-2:** Maintain a memorable City identity characterized by distinctive, high quality buildings and streetscapes.
- **Goal CD-4:** Establish distinct, attractive identities for neighborhoods, gateways and commercial areas.
- **Goal CD-P-8:** Upgrade and enhance the visual quality of Manteca's arterial and collector streets.
- **Policy CD-P-15:** Major arterial streets shall include a common landscape theme that includes primary street trees, groundcover, sidewalks, bus shelters where required, and lighting applied throughout the City.
- **Policy CD-P-16:** The City shall develop special design standards for the perimeter road system comprising Lathrop Road, Austin Road, Woodward Avenue, and Airport Way to ensure their development as divided roadways.
- **Policy CD-P-22:** Provide features that distinguish one neighborhood from another, such as natural features, entry gateways, street lighting, or signage.
- **Policy CD-P-24:** The City shall ensure through design guidelines that the walls surrounding residential area neighborhoods are attractive and well designed.
- **Policy CD-P-28:** The City shall establish residential design guidelines and standards.
- **Policy CD-P-29:** The City shall establish a street tree program for residential neighborhoods.
- **Policy CD-P-30:** Neighborhoods in new growth areas shall incorporate the following characteristics:
    - The edges of the neighborhood shall be identifiable by use of landscaped areas along major streets or natural features, such as permanent open space. Primary arterial streets may be used to define the boundaries of neighborhoods. The street system shall be designed to discourage high volume and high-speed traffic through the neighborhood.
    - Neighborhoods shall be not more than one mile in length or width.
    - Each neighborhood shall include a distinct center, such as an elementary school, neighborhood park(s), and/or a mixed-use commercial area within a reasonable walking distance of the homes, approximately one-half mile.
    - Each neighborhood shall include an extensive pedestrian and bikeway system comprised of sidewalks and bike lanes along streets and dedicated trails.
- **Policy CD-P-31:** The pedestrian and bikeway system shall be linked to other pedestrian and bikeways in adjacent neighborhoods and, ultimately, to the Citywide Pedestrian and Bikeway Trail System to provide a continuous interconnected system.

- **Goal CD-9:** Establish a durable sustainable community that utilizes resources efficiently.
- **Policy CD-P-32:** New buildings shall be designed to be responsive to the local climate in a manner that provides shelter from sun and rain for pedestrians.
- **Policy CD-P-33:** Passive solar design features are encouraged whenever possible. Design of buildings should consider energy-efficient concepts such as natural heating and/or cooling, sun and wind exposure and orientation, and other solar energy opportunities.
- **Policy CD-P-34:** Solar collectors, if used, shall be oriented away from public view or designed as an integral element of the roof structure.
- **Policy CD-P-35:** Architectural elements that contribute to a building's character, aid in climate control, and enhance pedestrian scale are encouraged. Examples include canopies, roof overhangs, projections or recessions of stories, balconies, reveals, and awnings.
- **Policy CD-P-36:** Encourage the creation of an urban forest comprised of street trees, residential lot trees, and trees in non-residential parking lots and other public open space.
- **Goal CD-11:** To the extent possible, new development shall retain or incorporate visual reminders of the agricultural heritage of the community.
- **Policy CD-P-44:** Provide minimal levels of street, parking, building, site and public area lighting to meet safety standards and provide direction.
- **Policy CD-P-45:** Provide directional shielding for all exterior lighting to minimize the annoyance of direct or indirect glare.
- **Policy CD-P-46:** Provide automatic shutoff or motion sensors for lighting features in newly developed areas.
- **Policy CD-P-47:** The City shall adopt light and glare standards that minimize the creation of new light source and the annoyance of direct and indirect glare.
- **Policy CD-P-50:** In order to retain a visual reminder of the agricultural heritage, the City will permit the use of non-fruiting species, such as flowering pear and plum, as secondary accent trees in landscape corridors along major streets. The primary street tree shall provide a shade canopy over the street and sidewalk.
- **Goal ED-11:** Maintain and enhance the real and perceived safety in the community.
- **Goal ED-13:** Preserve and strengthen the city neighborhoods.
- **Goal ED-15:** Promote and protect qualities and resources that make the Manteca area special, identifiable, unique, and attractive.
- **Goal ED-16:** Maintain and enhance the physical beauty of the Community and surrounding landscape.
- **Policy ED-P-19:** Promote Manteca as a desirable location to live and visit, promoting the "Family City" image.
- **Policy ED-P-21:** Enhance community identity and beauty.
- **Goal PF-4:** Public improvements and facilities will be designed to enhance, rather than degrade, the natural environment in the City and surrounding area.

- **Policy RC-P-16:** Provide public and private open space within urbanized parts of Manteca, in order to provide visual contrast with the built environment and to provide for the recreational needs of residents.
- **Policy RC-P-18:** New development shall maximize the potential for open space and visual experiences.

Municipal Code

The City of Manteca Zoning Ordinance addresses exterior lighting and glare in Section 17.13.040.D and Section 17.15.090.G of the City Municipal Code:

Section 17.13.040.D. Glare.

1. No direct glare shall be permitted with the exception that parking areas and walkways may be illuminated by luminaries so hooded or shielded that the maximum angle of the cone of direct illumination shall be sixty degrees if the luminary is not less than six feet above the ground. Such luminaries shall be placed not more than twenty feet above ground level and shall not be in excess of ten foot candles.
2. Indirect glare shall not exceed that value which is produced by an illumination of the reflecting surface, not to exceed:
    a) 10 foot-candle (maximum).
    b) 4 foot-candle (average).
    c) 1 foot-candle (minimum).
    d) Any light or combination of lights shall not cast light on residential property and shall not exceed 0.0 foot-candles as measured from said property.

Section 17.15.090.G. Lighting.

1. Public parking areas designed to accommodate ten or more vehicles in other than vehicle sales areas shall provide a minimum lighting level of one foot candle of maintained illumination on the parking surface during the hours of use between one-half hour before dusk and one-half hour after dawn.
2. Any parking area illumination, including security lighting, shall be so arranged as to reflect away from adjoining properties and rights-of-way.

3.1.4 - Methodology

Michael Brandman Associates (MBA) evaluated potential project impacts on aesthetics, light, and glare through site reconnaissance and review of applicable plans and policies. MBA personnel visited the project site and surrounding land uses in August 2010, and documented the site conditions through photographs and notation. The City of Manteca General Plan and the City of Manteca Zoning Ordinance were reviewed to determine applicable policies and design requirements for the proposed project. Additionally, the proposed project's site plan was reviewed to determine compliance with the requirements of the General Plan and Zoning Ordinance.

3.1.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist of the CEQA Guidelines, aesthetics impacts resulting from the implementation of the proposed project would be considered significant if the project would:

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

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway? (Refer to Section 7, Effects Found Not To Be Significant.)

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

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

3.1.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Scenic Vista

Impact AES-1: The proposed project would not have a substantial adverse effect on a scenic vista.

Impact Analysis

This impact will evaluate the potential for the proposed project to adversely affect scenic vistas.

A scenic vista is generally considered a view of an area that has remarkable scenery or a resource that is indigenous to the area. The project site itself does not provide any visual resources that would be considered a scenic vista because it primarily consists of agricultural lands, and rural residential uses that are relatively common in other areas of the City and are not unique to the surrounding visual setting. Further, onsite agricultural production activities have altered the natural landscape; therefore, the project site does not provide views of the indigenous natural landscape. Although the current land uses provide views of an agricultural landscape that is representative of the region, the project area does not contain resources that are exemplary of the agricultural history of the area (such as historic structures or landmarks; see Section 3.5, Cultural Resources). Views of the project site are not unique in the region.

The project site is generally flat, with mostly unobstructed views of the surrounding agricultural lands, and residential developments. Neither the project area nor any of the surrounding land uses contains features typically associated with scenic vistas (e.g., ridgelines, peaks, overlooks). Therefore, little opportunity exists for project activities to obscure views of scenic vistas that may be located within the immediate area of the project site.

More distant views of the Coast Ranges (including Mt. Diablo) and the Sierra Nevada Mountains would largely be unaffected by the development of the proposed project, because of the distance and limited visibility of these features. Furthermore, the City of Manteca does not identify views of these features to be "protected"; therefore, any obstruction that does occur would not be significant.

Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Visual Character

Impact AES-2:	**The proposed project would not degrade the visual character of the project site and its surroundings.**

Impact Analysis

This impact will evaluate the potential for the proposed project to degrade visual character.

The project site occupies approximately 477 acres on relatively flat land with the exception of an elevated levee dividing the project site. Land uses in the project area consist of agricultural operations and rural residences.

The proposed project seeks to develop as many as 1,650 residential units. As shown in Exhibit 2-4, the highest density multi-family uses are located along the north and east project boundaries, with gradual transition to the lowest density single-family uses located in the southern and southeastern portions of the project site. The project would incorporate a trail system throughout the site of over 12 miles that will eventually connect to the City facilities. The proposed project also includes over 75 acres of linear parks and a clubhouse to be utilized by the residents. Approximately 177 acres of the project site that lies south of the dry levee will not be developed with any structures.

The proposed project will be zoned Single-Family Residential (R-1), Multiple-Family Residential/Institutional (R-4), Open Space (O-S), with Planned Development (PD) overlay. The Planned Development (PD) overlay is intended to facilitate a cohesive project design among the various base zoning districts.

Design standards are required of all developments. Design guidelines are recommended measures that help ensure quality design. Together, the standards and guidelines address the placement and appearance of buildings, circulation, parking and loading, landscape design, fencing and screening,

signage, exterior lighting, and sustainable design practices. At this time, no Design Guidelines are available. As such, mitigation is proposed requiring the applicant to prepare Design Guidelines prior to issuance of the first building permit. The Design Guidelines would be prepared in conformance with the City's General Plan and Municipal Code.

The proposed project will be developed in conjunction with the development standards listed in the Manteca Municipal Code for residential development for setbacks, parking, signage, landscaping, and circulation. In addition to approval of Design Guidelines, the proposed project will be subject to Landscape Plan review, and Site Plan and Design review to ensure that new and modified uses and development will be compatible with the existing and potential development of the surrounding area, and to produce an environment of stable, and desirable character. The site plan would include information on construction materials; architectural styles; the harmony and proportion of the overall design; siting of the structure on the property; color scheme of the proposed structure, parking, and circulation; signs; and landscaping and screening.

The proposed project incorporates a trail system throughout the site of over 12 miles that will eventually connect to the City facilities and over 75 acres of linear parks and a clubhouse to be utilized by the residents. The project includes a mix of varying development densities that would allow for a variety of roof forms, heights, and massing of structures.

Approximately 177 acres south of the levee will be left as open space and would not result in any change in the visual character. Most of the project site north of the levee is not visible from the south. However, depending on the proposed building elevations, rooftops of the proposed development would be visible. This, however, is not identified as deterioration of visual character.

Surrounding Area

The area surrounding the project site is generally undergoing a transition from rural and agricultural open space uses to an urban environment. While over time the area would be fully developed with urban land uses, the project area is currently in a transitional state and provides representative views of typical agricultural and urban environments. Existing land uses surrounding the project area include agricultural, rural residential, and residential subdivisions. These land uses do not possess any unique visual attributes (for example, historic design elements) that could be adversely affected by the proposed project.

Conclusion

In summary, the proposed project would establish a compact and cohesive community on a mostly undeveloped site. The project site is located within an area that contains existing scattered rural residential, residential subdivisions, and agricultural land uses that are currently contemplated for future residential, commercial, and industrial uses. The City's Zoning Ordinance and site plan and landscape plan review process provide certainty that future development that occurs within the plan area will be compatible with surrounding land uses. Mitigation measures are recommended to ensure

that the proposed project would be built to high-quality design standards while adhering to the City's General Plan and Municipal Code. For these reasons, the proposed project would not degrade the visual character of the project site or its surroundings. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AES-2a Prior to issuance of the first building permit, the applicant shall prepare and submit Design Guidelines that establish Building Design Standards to the City of Manteca for review and approval. The Building Design Standards shall at a minimum address the following as described in the applicable General Plan policies: minimal visual prominence of garages, incorporation of entry gateways, signage, and well-designed boundary walls; natural/neutral exterior color scheme; climate responsive and pedestrian-friendly architectural features such as canopies, overhangs, and awnings; building design that uses natural ventilation and is oriented to minimize solar gain and maximize daylight; visually unobtrusive installation of solar collectors, etc.; and/or additional standards as determined the Community Development Director. The approved Building Design Standards shall be incorporated into the proposed project.

MM AES-2b Prior to issuance of the first building permit, the applicant shall prepare and submit Design Guidelines that establish Landscape Design Standards to the City of Manteca for review and approval. The Landscape Design Standards shall at a minimum address the following as described in the applicable General Plan policies: a common landscape theme that includes primary street trees along major arterial streets; a street tree program; use of non-fruiting species such as flowering pear and plum as secondary accent trees in landscape corridors along major streets; parking lot trees, or additional standards as determined the Community Development Director. The approved Landscaping Design Standards shall be incorporated into the proposed project.

MM AES-2c Prior to issuance of the first building permit, the applicant shall prepare and submit Design Guidelines that establish Street Design Standards to the City of Manteca for review and approval. The Street Design Standards shall at a minimum address the following as described in the applicable General Plan policies: interconnection between the pedestrian and bikeway system and its linkage to the Citywide Pedestrian and Bikeway Trail System; street lighting; common landscape theme along major arterial streets, or additional standards as determined the Community

Development Director. The approved Street Design Standards shall be incorporated into the proposed project.

Level of Significance After Mitigation

Less than significant impact.

Light and Glare

Impact AES-3:	**Implementation of the proposed project would not result in the introduction of substantial new sources of light and glare.**

Impact Analysis

This impact will evaluate the potential for the proposed project to introduce new sources of light and glare.

The approximately 477-acre project site has been used for agricultural purposes and does not contain a significant amount of artificial lighting. In addition, the project site does not contribute any measurable amount of light or glare to the area. Existing land uses such as the residential structures on the project site and surrounding residential development to the north and the west contribute to ambient lighting. Other nearby sources of light include streetlights along S. Woodward Avenue. Vehicles traveling along S. Woodward Avenue and E. Woodward Road are also nearby sources of light.

The proposed project would introduce new sources of light and glare that could affect day and nighttime views in the project vicinity. The project would require lighting of roadways, parking lots, and homes for security. If lighting in the proposed project is not designed in such a way to reduce upward directed light, nighttime lighting associated with the proposed project could obscure views of the night sky that are currently visible.

The exterior finishes of the buildings would be anti-reflective and would not contribute to glare. Building windows do not typically produce substantial amounts of glare, and in most cases, glare would be tempered by surrounding trees. Residential uses in general are not anticipated to create significant light and glare. However, given the proximity of the proposed project to existing agricultural lands to the north, south, and west, the addition of 1,650 dwelling units would add new sources of light and glare. Mitigation is recommended to ensure that light and glare impacts are reduced to less than significant levels.

Approximately 177 acres south of the levee will be left as open space and would not create new sources of light and glare.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AES-3 Prior to issuance of the first building permit, the applicant shall prepare and submit an outdoor lighting plan (which includes a photometric analysis) to the City of Manteca that includes a footcandle map illustrating the amount of light from the project site at adjacent light sensitive receptors. The lighting map shall comply with the following General Plan policies and shall include minimal levels of street; parking, building, site, and public area lighting to meet safety standards and provide direction; directional shielding for all exterior lighting; and automatic shutoff or motion sensors and/or additional standards as determined by the Community Development Director.

Level of Significance After Mitigation

Less than significant impact.

3.2 - Agricultural Resources

This section describes the existing agricultural resources and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information provided by the California Department of Conservation Farmland Mapping and Monitoring Program and the United States Department of Agriculture. The Land Evaluation and Site Assessment model is provided in this EIR as Appendix B.

3.2.1 - Environmental Setting

Agricultural Economy

The City of Manteca is located in an area of rich agricultural resources, including orchards, dairies, vineyards, row crops, and pasture land. As noted in the City of Manteca General Plan, the Manteca economy is transforming from agriculture and agriculturally related industries to warehousing and distribution industries that take advantage of the central location, relatively affordable land, and transportation network. However, for San Joaquin County as a whole, agriculture remains the largest economic activity.

The City of Manteca is located in San Joaquin County. Agriculture is the dominant land use in San Joaquin County, accounting for 84 percent of the total land area according to the California Department of Conservation Farmland Mapping and Monitoring Program. San Joaquin County has consistently maintained its status as one of the top 10 agricultural-producing counties in California during the past 5 years. Table 3.2-1 summarizes agricultural production in the County between 2004 and 2008. As shown in the table, the production value of San Joaquin County crops increased from $1.61 billion to $2.13 billion between 2004 and 2009.

Table 3.2-1: San Joaquin County Agricultural Economy (2004-2008)

Year	Value (Billions)	Rank in State
2004	$1.61	7
2005	$1.73	8
2006	$1.68	6
2007	$2.00	7
2008	$2.13	7
Source: United States Department of Agriculture, 2004–2008.		

Table 3.2-2 summarizes the top 10 agricultural commodities produced in San Joaquin County by dollar value in 2008. Milk is the leading commodity, with a production value of $412 million.

Table 3.2-2: San Joaquin County Agricultural Commodity Summary (2008)

Rank	Commodity	Value (Millions)
1	Milk	$412
2	Grapes	$221
3	Walnuts	$178
4	Cherries	$175
5	Almond Meats	$175
6	Tomatoes	$145
7	Hay	$108
8	Cattle and Calves	$97
9	Corn, Grain	$69
10	Apples	$48
Source: San Joaquin County Agricultural Commissioner, 2009.		

Farmland Classifications

The California Department of Conservation Farmland Mapping and Monitoring Program classifies cultivated agricultural land into four categories, listed below:

- **Prime Farmland:** Land with the best combination of physical and chemical features able to sustain the long-term production of agricultural crops. These lands have the soil quality, growing season, and moisture supply needed to produce sustained high yields.
- **Unique Farmland:** Land of lesser-quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards, as found in some climactic zones in California.
- **Farmland of Statewide Importance:** Land similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to hold and store moisture.
- **Farmland of Local Importance:** Land of importance in the local agricultural economy, as determined by each county's Board of Supervisors and a local advisory committee.

Table 3.2-3 provides a summary of Important Farmland acreage in San Joaquin County between 2000 and 2006. As shown in the table, Important Farmland acreage decreased by 6,875 acres or 1.1 percent between 2000 and 2006.

Table 3.2-3: San Joaquin County Important Farmland Summary (2000-2006)

Classification	Acres			
	2000	2002	2004	2006
Prime Farmland	419,227	416,307	412,548	407,609
Farmland of Statewide Importance	93,739	92,559	91,225	89,273
Unique Farmland	59,118	61,030	62,534	63,231
Farmland of Local Importance	58,906	56,506	57,808	59,957
Important Farmland Total	**630,990**	**626,402**	**624,115**	**624,115**
Total County area	912,601	912,602	912,600	912,600

Notes:
Difference in County area acreage figure attributable to changes in GIS mapping technology.
Source: California Department of Conservation, 2004–2008.

Project Site

Important Farmland

Exhibit 3.2-1 depicts the Important Farmland designations for the project site. As shown in the exhibit, the project site contains 374.35 acres of Prime Farmland and 99.72 acres of Farmland of Statewide Importance. Non-Important Farmland designations represent the balance of the acreage.

Soils

Exhibit 3.2-2 provides the agricultural soil mapping for the project site. As shown in the exhibit, the project site contains mostly Columbia fine sandy loam (220.87 acres) and Merrit silty clay loam (146.21 acres). The remaining soil types include Delhi loamy sand (4.67 acres), Dello loamy sand (68.37 acres), Egbert mucky clay loam (0.08 acres), Grangeville fine sandy loam (0.30 acres), Guard clay loam (15.24 acres), and Tinnin loamy coarse sand (26.71 acres).

Williamson Act Contracts

As further discussed in the Regulatory Framework, the California Land Conservation Act, also known as the Williamson Act, is a voluntary program that allows agricultural property owners to have their property assessed on the basis of its agricultural production rather than at the current market value.

Exhibit 3.2-3 depicts the locations of active Williamson Act contracts in the project vicinity. As shown in the exhibit, the entire project site is encumbered by an active Williamson Act Contract. In addition, agricultural lands to the west, east, and south of the project site are encumbered by an active Williamson Act Contract.

The project site's Williamson Act contract dates to 1976. The property owner filed a Notice of Non-Renewal in November 2005 to initiate termination of the contract. The property owner subsequently filed a Petition for Cancellation of Contract with the City of Manteca in March 2009.

Surrounding Agricultural Land Uses

Exhibit 3.2-3 identifies the Zone of Influence around the project site. The Zone of Influence encompasses all parcels within 0.25 mile of the project site and is intended to provide context about the surrounding land uses. The Zone of Influence encompasses approximately 5,153.6 acres, of which approximately 4,419.6 acres or 86 percent are shown as being in agricultural production. Note that the aerial map used in Exhibit 3.2-3 was prepared using the most recent California Department of Conservation Farmland Mapping and Monitoring Program report for 2004–2006 and, therefore, may not reflect land use changes that have occurred since the report release date.

3.2.2 - Regulatory Framework

State

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program was established in 1982 to continue farmland mapping efforts initiated in 1975 by the Soil Conservation Service (since renamed Natural Resources Conservation Service [NRCS]) of the U.S. Department of Agriculture. Since 1980, the State of California has assisted the NRCS with completing its mapping in the State. The Farmland Mapping and Monitoring Program was created within the California Department of Conservation to carry on the mapping activity on a continuing basis and with a greater level of detail.

Williamson Act

In 1965, The California Land Conservation Act, also known as the Williamson Act, was adopted. This voluntary program allows property owners to have their property assessed on the basis of its agricultural production rather than at the current market value. The property owner is thus relieved of having to pay higher property taxes, as long as the land remains in agricultural production. The purpose of the Act is to encourage property owners to continue to farm their land, and to prevent the premature conversion of farmland to urban uses. Participation requires that the area consist of 100 contiguous acres of agricultural land under one or more ownerships.

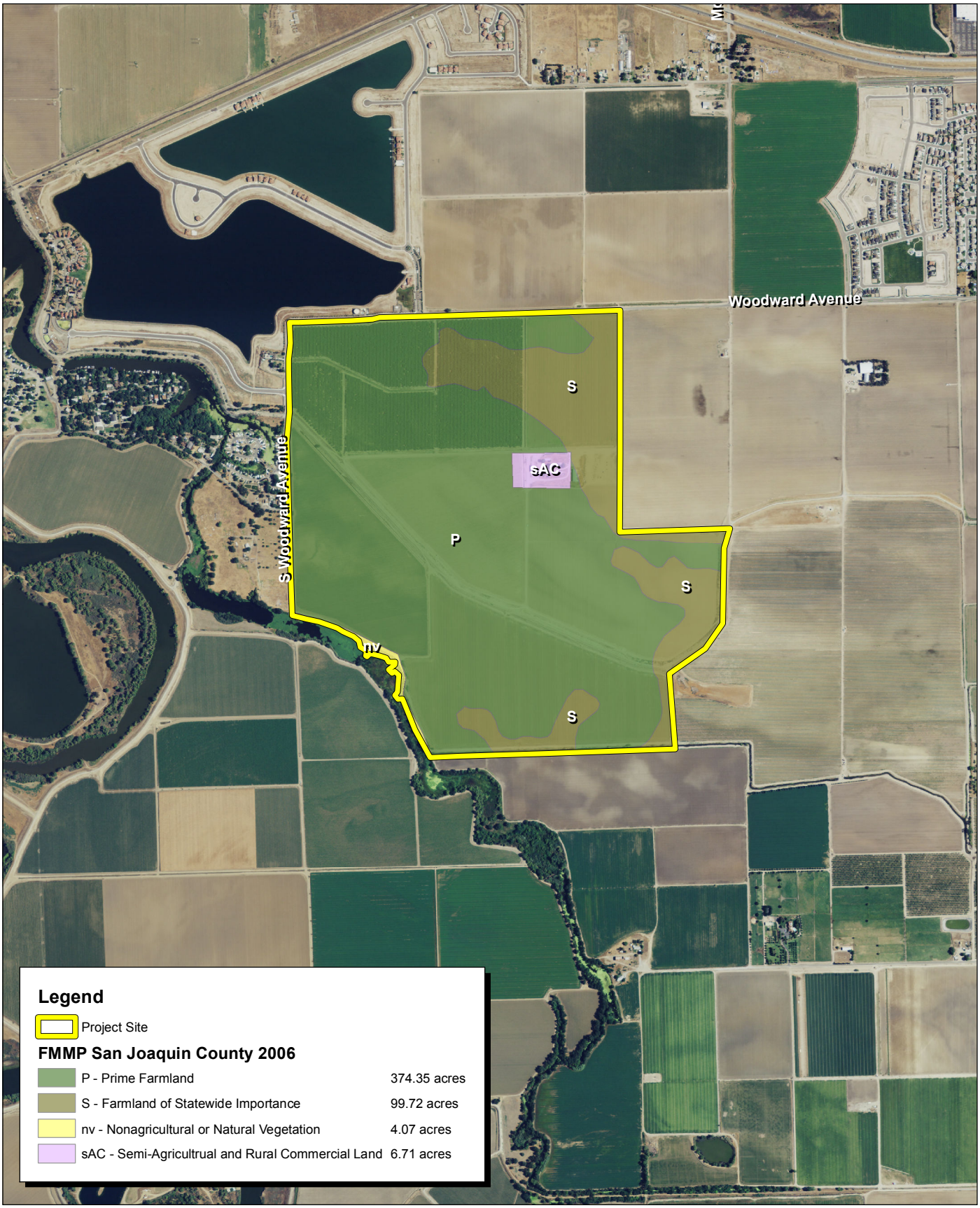
Upon approval of an application by the Board of Supervisors, the agricultural preserve is established, and the land within the preserve is restricted to agricultural and compatible uses for at least 10 years. Williamson Act contracts are automatically renewed annually for an additional one-year period, unless the property owner applies for non-renewal or early cancellation. The Williamson Act also contains limited provisions for cancellation of contracts, and a substantial penalty for the cancellation is assessed.

Local

City of Manteca

General Plan

The City of Manteca General Plan established the following goals and policies related to agricultural resources that are applicable to the proposed project:



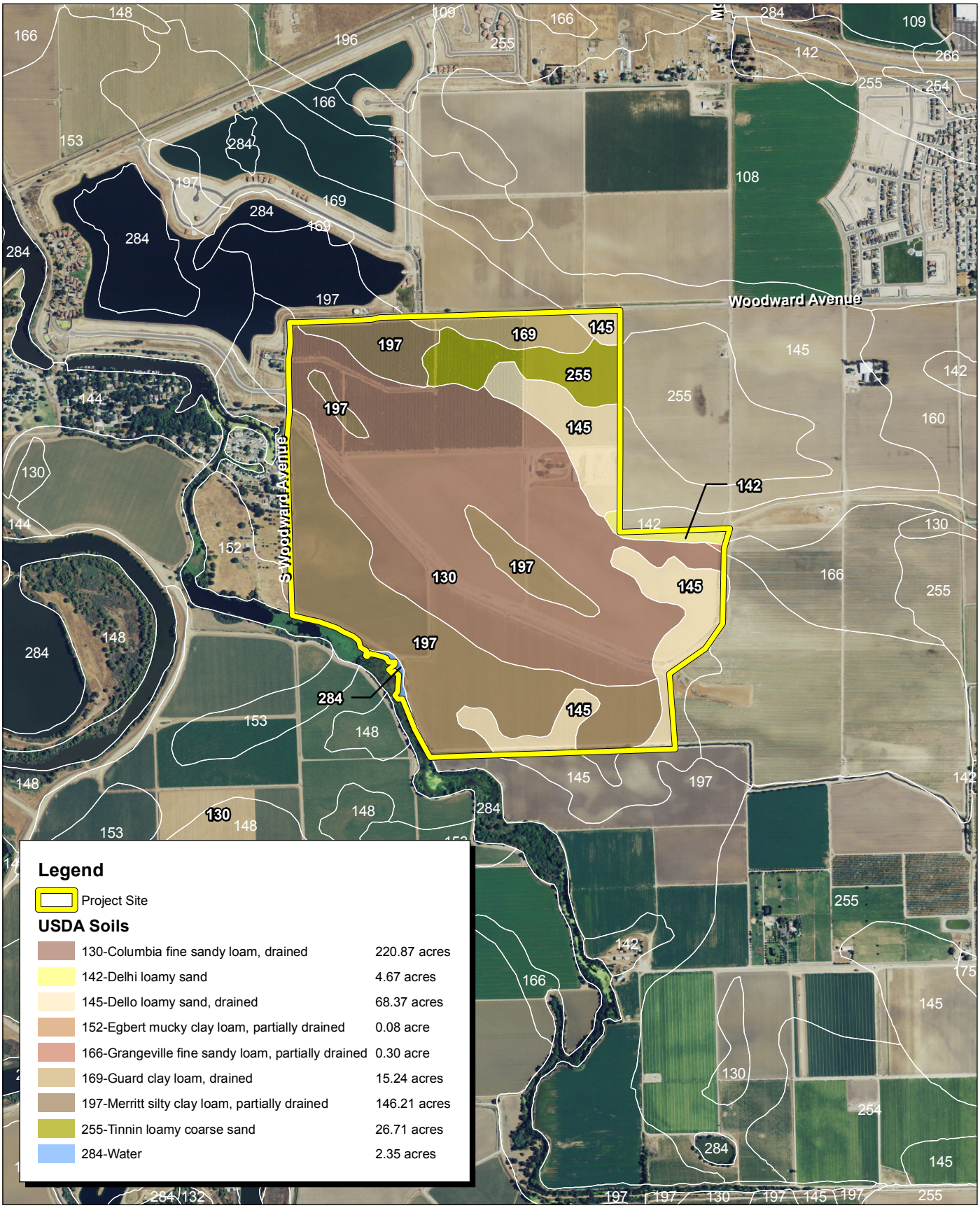
Source: San Joaquin County NAIP, 2009. Dahlin Group Architecture Planning, July 2010. Farmland Mapping and Monitoring Program, 2006.

Michael Brandman Associates

NORTH

1,600 800 0 1,600 Feet

Exhibit 3.2-1
Important Farmland Map



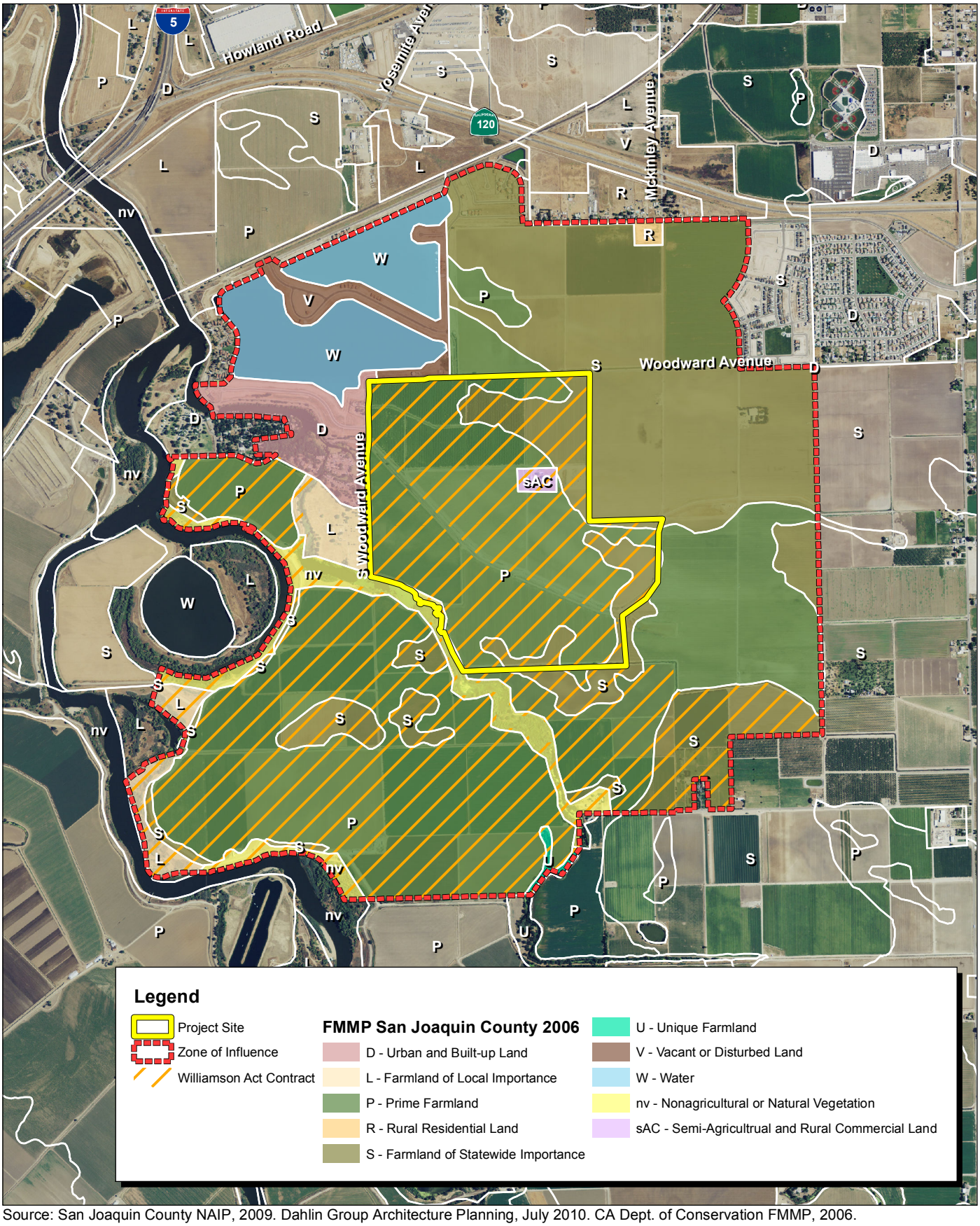
Source: San Joaquin County NAIP, 2009. Dahlin Group Architecture Planning, July 2010. USDA Soils Data.

Michael Brandman Associates

NORTH

1,600 800 0 1,600 Feet

Exhibit 3.2-2
USDA Soils Map



Source: San Joaquin County NAIP, 2009. Dahlin Group Architecture Planning, July 2010. CA Dept. of Conservation FMMP, 2006.

Michael Brandman Associates

NORTH

2,400 1,200 0 2,400

Feet

Exhibit 3.2-3
Zone of Influence

- **Goal RC-9:** To promote the continuation of agricultural uses in the Manteca area and to discourage the premature conversion of agricultural land to nonagricultural uses, while providing for the urban development needs of Manteca.
- **RC-P-19:** The City shall support the continuation of agricultural uses on lands designated for urban use, until urban development is imminent.
- **RC-P-20:** The City shall provide an orderly and phased development pattern so that farmland is not subjected to premature development pressure.
- **RC-P-21:** In approving urban development near existing agricultural lands, the City shall take actions so that such development will not unnecessarily constrain agricultural practices or adversely affect the viability of nearby agricultural operations.
- **RC-P-22:** Nonagricultural uses in areas designated for agriculture should be redirected to urban areas.
- **RC-P-23:** Protect designated agricultural lands, without placing an undue burden on agricultural landowners.
- **RC-P-24:** Provide buffers at the interface of urban development and farmland; in order to minimize conflicts between these uses.
- **RC-P-25:** The City shall ensure, in approving urban development near existing agricultural lands, that such development will not unnecessarily constrain agricultural practices or adversely affect the economic viability of nearby agricultural operations.
- **RC-P-30:** The City of Manteca will participate in a county-wide program to mitigate the conversion of Prime Farmland and Farmlands of Statewide Importance to urban uses.

City of Manteca Right to Farm Ordinance

Chapter 8.24 of Manteca Municipal Code is a "Right to Farm" ordinance intended to protect agricultural productivity in the City. The ordinance states:

> It is the policy of this City to preserve, protect and encourage the use of viable agricultural land for the production of food and other agricultural products. When nonagricultural land uses extend into or approach agricultural areas, conflicts often arise between such land uses and agricultural operations. Such conflicts often result in the involuntary curtailment or cessation of agricultural operations, and discourage investment in such operations. This chapter is intended to reduce the occurrence of conflicts between nonagricultural and agricultural land uses within the City.

City of Manteca Agriculture Mitigation Fee Program

In June 2005, the Manteca City Council adopted Ordinance No. 1304, adding Chapter 13.42 to the Manteca Municipal Code, which established the agricultural mitigation fee program. This was done in conjunction with a settlement agreement, in which the cities of Lathrop, Manteca, and Tracy agreed to implement the program to mitigate the loss of Important Farmland, due to the conversion to

private urban uses. Under the program, the fees collected are used to acquire farmland conservation easements or farmland deed restrictions. The fee is adjusted each year.

3.2.3 - Methodology

Michael Brandman Associates evaluated the proposed project's impacts on Important Farmland through the use of the Land Evaluation and Site Assessment (LESA) model issued by the California Department of Conservation. The LESA model provides analytical approach for rating the relative quality of land resources based upon specific measurable features. Factors considered by the LESA model include soils, site acreage, water availability, and surrounding land uses. The LESA model worksheets are provided in Appendix B.

3.2.4 - Thresholds of Significance

For the purposes of this EIR, to determine whether impacts to agricultural resources are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

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

c) Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526)? (Refer to Section 7, Effects Found Not To Be Significant.)

d) Result in the loss of forest land or conversion of forest land to non-forest use? (Refer to Section 7, Effects Found Not To Be Significant.)

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?

3.2.5 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Convert Important Farmland to Non-Agricultural Use

Impact AG-1:	**The proposed project may result in the conversion of Important Farmland to non-agricultural use.**

Impact Analysis

This impact will evaluate the potential for the proposed project to convert Important Farmland to non-agricultural use.

As shown in Exhibit 3.2-1, the project site area contains 374.35 acres of Prime Farmland and 99.72 acres of Farmland of Statewide Importance. Because it is uncertain if the existing agricultural uses below the levee will remain, this impact will evaluate the conversion of agricultural land under two scenarios:

- All 474.07 acres of Important Farmland are converted to non-agricultural use.
- The 300-acre developable portion of the project site is converted to non-agricultural use. The area below the levee is assumed to remain in agricultural production.

To assess the significance of this conversion, Michael Brandman Associates prepared a LESA model for each scenario. Each scenario is evaluated below.

Conversion of Entire Site

Table 3.2-4 summarizes the LESA model score results based on the assumption that all 474.07 acres of Important Farmland would be converted to non-agricultural use.

Table 3.2-4: Land Evaluation and Site Assessment Model Scoring Summary – Conversion of Entire Site

Category	Factor	Points	Factor Weigh	Weighted Points	Remarks
Land Evaluation	Land Capability Class	75	0.25	19.0	The project site contains mostly Class IIw soils, which have few agricultural limitations and, therefore, are considered to have high agricultural value.
	Storie Index	56	0.25	14.1	The project site has a high Storie Index because of the high agricultural value of the soils.
		Subtotal	**0.50**	**33.1**	—
Site Assessment	Project Size	100	0.15	15.0	The project site size rating is 100 because the soils are of high agricultural value.
	Water Resources Availability	65	0.15	9.8	The project site is assumed to have access to irrigation district water, although physical and economic restrictions may limit water availability during drought years.
	Surrounding Agricultural Lands	90	0.15	13.5	Farmland accounts for 86 percent of the surrounding land uses, which translates to 90 points.
	Surrounding Protected Resource Lands	60	0.05	3.0	Protected resource lands account for 67 percent of surrounding acreage, which translates to 60 points.
		Subtotal	**0.50**	**41.3**	—
			Total	**74.3**	—

Table 3.2-4 (cont.): Land Evaluation and Site Assessment Model Scoring Summary – Conversion of Entire Site

Category	Factor	Points	Factor Weigh	Weighted Points	Remarks
Notes: LESA scoring sheet provided in Appendix B. Source: Michael Brandman Associates, 2010.					

As shown in Table 3.2-4, the project site has a total score of 74.3. The LESA model indicates that scores between 60 and 79 points are considered significant unless either the Land Evaluation subtotal or the Site Assessment subtotal is less than 20. In this case, neither subtotal is less than 20; therefore, the proposed project would be considered to have a significant impact in terms of converting Important Farmland to non-agricultural use.

Conversion of 300 acres

Table 3.2-5 summarizes the LESA model score results based on the assumption that the 300-acre developable portion of the project site north of the levee would be converted to non-agricultural use.

Table 3.2-5: Land Evaluation and Site Assessment Model Scoring Summary – Conversion of 300 Acres

Category	Factor	Points	Factor Weigh	Weighted Points	Remarks
Land Evaluation	Land Capability Class	74.5	0.25	18.6	The project site contains mostly Class IIw soils, which have few agricultural limitations and, therefore, are considered to have high agricultural value.
	Storie Index	58	0.25	14.5	The project site has a high Storie Index because of the high agricultural value of the soils.
		Subtotal	**0.50**	**33.1**	—
Site Assessment	Project Size	100	0.15	15.0	The project site size rating is 100 because the soils are of high agricultural value.
	Water Resources Availability	65	0.15	9.8	The project site is assumed to have access to irrigation district water, although physical and economic restrictions may limit water availability during drought years.
	Surrounding Agricultural Lands	90	0.15	13.5	Farmland accounts for 89 percent of the surrounding land uses, which translates to 90 points.

Table 3.2-5 (cont.): Land Evaluation and Site Assessment Model Scoring Summary – Conversion of 300 Acres

Category	Factor	Points	Factor Weigh	Weighted Points	Remarks
Site Assessment (*cont.*)	Surrounding Protected Resource Lands	70	0.05	3.5	Protected resource lands account for 73 percent of surrounding acreage, which translates to 70 points.
	Subtotal		**0.50**	**41.8**	—
			Total	**74.9**	—
Notes: LESA scoring sheet provided in Appendix B. Source: Michael Brandman Associates, 2010.					

As shown in Table 3.2-5, the project site has a total score of 74.9. The LESA model indicates that scores between 60 and 79 points are considered significant unless either the Land Evaluation subtotal or the Site Assessment subtotal is less than 20. In this case, neither subtotal is less than 20; therefore, the proposed project would be considered to have a significant impact in terms of converting Important Farmland to non-agricultural use.

Summary of Impacts

Under both scenarios, the conversion of Important Farmland to non-agricultural use constitutes a significant impact.

The City of Manteca General Plan designates the project site as "Urban Reserve-Low density Residential" and "Urban Reserve- Very Low density Residential." The Manteca Zoning Ordinance designates the project site "Planned Employment Center (PEC)." These designations indicate the City has contemplated the conversion of this agricultural land to urban uses over the planning horizon of the General Plan and, therefore, does not view the project area as a preferred location for permanent agricultural uses. The EIR for the City of Manteca General Plan found that conversion of prime agricultural land, including the project site, to urban uses to be a significant and unavoidable impact. As part of adopting the City General Plan, the Manteca City Council adopted findings of fact and a statement of overriding consideration that indicated urban development was of greater benefit to the community than preserving agricultural land within city limits. Although conversion of the project area to urban uses would reflect the land use assumptions contained in the City of Manteca General Plan, farmland is an important resource to the region, and direct conversion of Important Farmland to urban land uses would be considered a significant impact under LESA methodology.

The California Department of Conservation identifies preservation of existing Important Farmland acreage as the desired mitigation for the loss of such acreage. The City's agricultural mitigation fee program helps offset the conversion of Important Farmland through the acquisition of irrevocable instruments on active farmland (e.g., conservation easements or farmland deed restrictions).

Accordingly, Mitigation Measure AG-1 requires the applicant to pay the required City of Manteca agricultural mitigation fee. Implementation of this mitigation measure would substantially lessen significant impacts associated with the conversion of Important Farmland within the project area, by funding irrevocable instruments that would provide assistance to the public and private sectors in permanently preserving farmland.

Although the agricultural mitigation fee would be used to fund an irrevocable instrument to permanently preserve farmland, as much as 474.07 acres of Important Farmland would be permanently converted to non-agricultural use as a result of project implementation. The fees collected by Mitigation Measure AG-1 do not provide certainty that net new Important Farmland acreage would be created or the productivity of existing non-Important Farmland could be improved such that it could be re-classified as Important Farmland. Therefore, full compensation for the loss of Important Farmland is not feasible. Furthermore, no other feasible mitigation is available to fully offset the loss of Important Farmland. Therefore, the residual significance of this impact would be significant and unavoidable.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AG-1 At the time building permits are sought for the proposed project, the project applicant shall pay the required City of Manteca agricultural mitigation fee to help offset the conversion of Important Farmland pursuant to Manteca Municipal Code Chapter 13.42.

Level of Significance After Mitigation

Significant and unavoidable impact.

Conflict with Existing Zoning or Williamson Act Contract

Impact AG-2: The proposed project may conflict with an active Williamson Act Contract.

Impact Analysis

This impact will evaluate the potential for the proposed project to conflict with existing agricultural zoning or Williamson Act contracts.

Agricultural Zoning

The Manteca Zoning Ordinance designates the project site "Planned Employment Center." This is a non-agricultural zoning designation. The project applicant is proposing to re-zone the project site to Single-Family Residential (R-1), Multiple-Family Residential/Institutional (R-4), Open Space (O-S), with Planned Development overlay. The residential zoning districts are non-agricultural zoning designations. The Open Space zoning designation would apply to the agricultural uses that would be

maintained south of the levee and, therefore, be compatible with these uses. Therefore, no conflicts with agricultural zoning would occur.

Williamson Act Contracts

The project site is encumbered by a Williamson Act Contract that dates to 1976. The property owner filed a Notice Non-Renewal in November 2005 to initiate termination of the contract. The property owner subsequently filed a Petition for Cancellation of Contract with the City of Manteca in March 2009.

The proposed cancelation would pertain to the portion of the project site north of the dry levee that would support residential development. The portion of the project site south of the dry levee that would continue in agricultural production would remain encumbered by the Williamson Act Contract until it expires pursuant to the Notice Non-Renewal.

Government Code Section 51280 through 51283 sets forth procedures for cancelling a Williamson Act contract. The property owner must pay a cancellation fee and the lead agency must make findings justifying the cancellation. Table 3.2-6 summarizes the Williamson Act contract cancellation findings and provides a consistency analysis of whether or not the proposed project would meet the findings.

Table 3.2-6: Williamson Act Contract Cancellation Findings

Required Finding	Determination
That the cancellation is for land on which a notice of nonrenewal has been served pursuant to Section 51245.	**Consistent:** A Nonrenewal notice was filed pursuant to Section 51245 on November 28, 2005.
That cancellation is not likely to result in the removal of adjacent lands from agricultural use.	**Consistent:** Active agricultural land is located on adjacent lands to the west, north, east, and south. Agricultural lands to the west and south are encumbered by active Williamson Act contracts and are located in unincorporated San Joaquin County (refer to Exhibit 3.2-3). As such, it is unlikely these lands would be converted to non-agricultural use. Agricultural land to the north and east are not encumbered by active Williamson Act contracts and are within the Manteca city limits. The City of Manteca General Plan and Zoning Ordinance contemplates urban development on these properties. As such, these properties are expected to ultimately convert to urban development and, therefore, the cancellation of the project site's Williamson Act would not have any bearing on this anticipated condition. Finally, approximately 177 acres of the project site would remain in agricultural production and would remain encumbered by the Williamson Act contract until it expires.

Table 3.2-6 (cont.): Williamson Act Contract Cancellation Findings

Required Finding	Determination
That cancellation is for an alternative use, which is consistent with the applicable provisions of the city or county general plan.	**Consistent:** The City of Manteca General Plan designates the developable portion of the project site as "Urban Reserve-Low Density Residential" and "Urban Reserve-Very Low Density Residential." The project applicant is seeking a General Plan Amendment to re-designate the developable portion of the project site to alternate residential designations, but which are still residential in nature. As such, the proposed alternative use would be consistent with the General Plan.
That cancellation will not result in discontiguous patterns of urban development.	**Consistent:** Existing residential development is located west and north of the project site. As previously noted, urban development is contemplated to the north and east of the project site. As such, the proposed project would constitute contiguous and logical urban development. Finally, approximately 177 acres of the project site would remain in agricultural production. This area would serve as a buffer between the proposed project's residential uses and the agricultural uses to the east and south.
That there is no proximate noncontracted land which is both available and suitable for the use to which it is proposed the contracted land be put, or, that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.*	**Consistent:** As shown in Exhibit 3.2-3, there is noncontracted land within the Manteca city limits to the north and east of the project site. However, these sites are (1) currently entitled or proposed for urban development (e.g., Machado Estates; Terra Ranch), (2) not large enough to support a project of this size (e.g., the site immediately east of the project site), or (3) under multiple ownership. These characteristics render these uncontracted properties unavailable or unsuitable for the proposed project.
Cancellation is in the public interest based on the following findings: (1) Other public concerns substantially outweigh the objectives of this chapter; and (2) That there is no proximate noncontracted land which is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.	**Consistent:** The project site was annexed into the city limits in 1996 and is contemplated for future urban development by the General Plan and Zoning Ordinance. As such, the City of Manteca envisions the project site supporting urban development and accruing the associated benefits of new capital investment, job creation, increased tax revenues, new housing opportunities, and new open space/recreational amenities—all of which are in the public interest and can be found to outweigh the objectives set forth in Government Code Sections 15180 through 15183. As previously noted, other uncontracted properties in the project vicinity are unavailable or unsuitable for the proposed project.

Notes:
* Government Code Section 15182(a) defines "proximate, noncontracted land" as land not restricted by contract, which is sufficiently close to land that is so restricted it can serve as a practical alternative for the use that is proposed for the restricted land.
Source: Michael Brandman Associates, 2010.

As shown in the table, the proposed cancelation would be consistent with all required findings. (Note that the decision makers have the ability to propose alternate findings or modify the findings as they

see fit). Therefore, the City of Manteca has the legal basis to approve the Petition for Cancellation of Contract. As such, the applicant would be obligated to pay the cancellation fee, which is reflected in Mitigation Measure AG-2. With the payment of the cancellation fee, the Contract cancellation process would be completed; therefore, no conflicts with a Williamson Act contract would occur. Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AG-2: Prior to recordation of the final map for the proposed project, the project applicant shall pay the Williamson Act Contract cancellation fee as determined by the San Joaquin County Assessor's Office.

Level of Significance After Mitigation

Less than significant impact.

Pressures to Convert Farmland to Non-Agricultural Use

Impact AG-3:	**The project would not involve other changes to the existing environment, which, because of their location or nature, could result in conversion of farmland to non-agricultural use.**

Impact Analysis

This impact will evaluate the potential for the proposed project to create pressure to convert farmland to non-agricultural use.

The project site is surrounded by urban uses to the west, and agricultural land to the north, east, and south. The City of Manteca General Plan contemplates urban development on the undeveloped land east, west, and north of the project site. The land south of the project site is designated as Open Space by the City of Manteca. The land south of Walthall Slough is outside the City of Manteca's planning boundaries and is expected to remain under the jurisdiction of San Joaquin County, which currently designates the area as General Agriculture.

The designation of urban land uses for areas surrounding the project site indicates the City has planned for the conversion of the agricultural land within the City's planning boundary. General Plan Land Use Policy RC-P-24 identifies the use of buffers at the interface of urban development and farmland, such as roadways, to minimize conflict between urban and agricultural uses. In this case, the project incorporates open space, Woodward Avenue, and Walthall Slough as buffers between the project site and the agricultural uses/open space. Although the General Plan contemplates the long-term conversion of the lands to north and east of the project site to non-agricultural use, the use of a buffer is a widely recognized planning technique intended to prevent the premature conversion of agricultural land to non-agricultural use. The lands south of the project site would remain under the jurisdiction of San Joaquin County, which designates these lands for agricultural use. Walthall

Slough would serve as a buffer between the project site and the unincorporated lands south of the project site. As such, the proposed project would be consistent with the General Plan's policies intended to avoid premature conversion of farmlands; therefore, the proposed project would not create additional pressures to convert this land to non-agricultural use. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

3.3 - Air Quality/Greenhouse Gas Emissions

3.3.1 - Introduction

This section describes the existing air quality setting and potential effects from project implementation on the site and its surrounding area. The air quality analysis for the project includes construction and operational air quality modeling and greenhouse gas emissions modeling. The URBEMIS 2007 Version 9.2 land use emissions model as well as various emission factors were used to quantify project related emissions. The model output is provided in Appendix C, Air Quality Supporting Data.

3.3.2 - Environmental Setting

San Joaquin Valley Air Basin

The project area is located in the City of Manteca, which is located in the San Joaquin Valley Air Basin (Air Basin). Regional and local air quality are impacted by topography, dominant airflows, atmospheric inversions, location, and season. The combination of topography and inversion layers generally prevents the efficient dispersion of air pollutants. The information in this setting subsection is primarily from the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) and the accompanying Technical Document.

The Air Basin has an "inland Mediterranean" climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the Air Basin averages over 260 sunny days per year. At the Stockton Metropolitan Airport, the closest meteorological station located approximately 8 miles northeast of the project area, the maximum daily average temperatures (approximately 94.3 degrees Fahrenheit [ºF]) occur in July. The range of daily temperature in the summer can vary as much as 30ºF. The minimum daily average temperatures (approximately 37.5ºF) occur in January.

The majority of rainfall in the Air Basin occurs between November and April. Since 1948, precipitation at the Stockton Metropolitan Airport weather station averaged 13.8 inches per year, with 89 percent of the precipitation occurring between November and April.

Topography

The Air Basin is generally shaped like a bowl. It is open to the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

Dominant Airflow

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the Air Basin form natural horizontal barriers to the dispersion of air

contaminants. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Southeast Desert Air Basin portion of Kern County. As the wind moves through the Air Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

Inversions

Generally, the temperature of air decreases with height above the ground, creating a gradient from warmer air near the ground to cooler air at elevation. This gradient of cooler air over warm air is known as the environmental lapse rate. Inversions occur when warm air sits over cooler air, trapping the cooler air near the ground. These inversions trap pollutants from dispersing vertically and the mountains surrounding the San Joaquin Valley trap the pollutants from dispersing horizontally. Strong temperature inversions occur throughout the Air Basin in the summer, fall, and winter. Daytime temperature inversions occur at elevations of 2,000 to 2,500 feet above the San Joaquin Valley floor during the summer and at 500 to 1,000 feet during the winter. Strong inversions during the late fall and winter also give rise to "tule" fog, which is a thick ground fog that settles in the San Joaquin Valley. Tule fog causes very low visibility and can cause motor vehicle accidents.

The result is a relatively high concentration of air pollution in the valley during inversion episodes. These inversions cause haziness, which in addition to moisture may include suspended dust, a variety of chemical aerosols emitted from vehicles, particulates from wood stoves, and other pollutants. In the winter, these conditions can lead to CO "hotspots" along heavily traveled roads and at busy intersections. During summer's longer daylight hours, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between reactive organic gases (ROG) and oxides of nitrogen (NO_x), which results in the formation of ozone.

Location and Season

Because of the prevailing daytime winds and time-delayed nature of ozone formation, concentrations are highest in the southern portion of the Air Basin, such as around Bakersfield. Summers are often periods of hazy visibility and occasionally unhealthful air, while winter air quality impacts tend to be localized and can consist of (but are not exclusive to) odors from agricultural operations; soot or smoke around residential, agricultural, and hazard-reduction wood burning; or dust near mineral resource recovery operations.

Regional Air Quality

San Joaquin County Emissions Inventory

An emissions inventory is an account of the amount of air pollution generated by various emissions sources and is organized by source categories: mobile, stationary, areawide, and natural sources.

Mobile sources include on-road sources and off-road mobile sources. The on-road emissions inventory, which includes automobiles, motorcycles, and trucks, is an estimate of population, activity, and emissions of the on-road motor vehicles used in California. The off-road emissions inventory is

an estimate of the population, activity, and emissions of various off-road equipment, including recreational vehicles, farm and construction equipment, lawn and garden equipment, forklifts, locomotives, and commercial marine and marine pleasure craft.

Stationary sources are large, fixed sources of air pollution, such as power plants, refineries, and manufacturing facilities. Stationary sources also include aggregated point sources. These include many small point sources, or facilities, that are not inventoried individually but are estimated as a group and reported as a single-source category. Examples include gas stations and dry cleaners. Each of the local air districts estimates the emissions for the majority of stationary sources within its jurisdiction.

Areawide sources include source categories associated with human activity, and these emissions take place over a wide geographic area. Consumer products, fireplaces, farming operations (such as tilling), and unpaved road dust are examples of areawide sources.

Natural, or non-anthropogenic, sources include source categories with naturally occurring emissions such as wildfires and biogenic emissions from plants. Table 3.3-1 summarizes San Joaquin County's estimated 2008 emissions inventory for major categories of air pollutants presented in tons per day. According to the 2008 data (the most recent year available) for San Joaquin County, over 44 percent of ROG emissions came from mobile sources, almost equally split between on-road and off-road mobile sources. Approximately 27 percent of ROG emissions came from areawide sources, such as solvent evaporation and farming operations. For the CO inventory, mobiles sources accounted for approximately 88 percent of emissions. The 2008 NO_x inventory is similarly dominated by mobile sources (approximately 86 percent).

Areawide sources generated the majority of PM_{10} and $PM_{2.5}$ emissions in San Joaquin County. The PM_{10} inventory is dominated by areawide sources with 80 percent, mobile sources account for 12 percent. Within areawide sources, the main contributors of PM_{10} were farming operations and paved road dust, constituting 25 and 23 percent of the County's total PM_{10} inventory, respectively.

The inventory for $PM_{2.5}$ is also concentrated in areawide sources at approximately 57 percent, mobile sources account for 29 percent, and stationary sources for 14 percent. The main areawide sources to contribute to the County's $PM_{2.5}$ inventory were residential fuel combustion, farming operations, and paved road dust, contributing 15, 13, and 10 percent, respectively.

Table 3.3-1: San Joaquin County 2008 Emissions Inventory

Source	Pollutant (tons per day)				
	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$
Stationary Sources	7.5	4.9	10.6	2.6	1.6
Area Wide Sources	15.1	22.0	1.7	26.4	6.4

Table 3.3-1 (cont.): San Joaquin County 2008 Emissions Inventory

Source	Pollutant (tons per day)				
	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$
Mobile Sources	24.4	195.7	78.7	3.9	3.3
Natural (Non Anthropogenic)	8.2	0.2	0.0	0.0	0.0
Total	55.2	222.8	91.0	32.9	11.3
Source: California Air Resources Board, 2009.					

Local Air Quality

The SJVAPCD operates monitoring stations throughout the Air Basin. Existing local air quality, historical trends, and projections of air quality are best evaluated by reviewing relevant air pollutant concentrations from near the project area. The California Air Resources Board (CARB) and SJVAPCD operate five air monitoring stations in San Joaquin County. The closest monitoring station to the project area is located in Stockton on Hazelton Avenue near Wilson Way, approximately 6.5 miles to the north of the project area. Table 3.3-2 summarizes 2007 through 2009 published monitoring data from CARB's Aerometric Data Analysis and Management System for the Stockton-Hazelton Station. The monitoring data is considered representative of the air quality at the project area.

As shown in Table 3.3-2, ambient air pollution concentrations in the project area regularly exceeded the state 1-hour ozone standard and the federal 8-hour standard in the last 3 years. In the same timeframe, the project area exceeded the state daily PM_{10} standard and the federal $PM_{2.5}$ standard. However, the project area did not exceed the federal or state CO standards, nor did the project area exceed the federal PM_{10} standard. Note that the SJVAPCD indicates that the 3-year (2006–2008) average of the 98th percentile nitrogen dioxide concentrations at Stockton-Hazelton was 0.060 ppm.

Table 3.3-2: Air Quality Monitoring Summary

Pollutant	Averaging Time (Units)	2007	2008	2009
Ozone	Maximum 1-Hour (ppm) Days > State Standard (0.09 ppm)	0.093 0	**0.105** **2**	**0.116** **2**
	Maximum 8-Hour (ppm)[1] Days > 2008 Federal Standard (0.075 ppm) Days > State Standard (0.07 ppm)	**0.082** **3** **4**	**0.091** **4** **7**	**0.096** **2** **4**
Nitrogen dioxide (NO_2)	Annual Average (ppm)	0.016	0.017	0.015
	Maximum 1-Hour (ppm) Days > State Standard (0.18 ppm)	0.070 0	0.076 0	0.068 0

Table 3.3-2 (cont.): Air Quality Monitoring Summary

Pollutant	Averaging Time (Units)	2007	2008	2009
Sulfur dioxide	Maximum 24-Hour (ppm) Days > State Standard (0.04 ppm)	0.007 0	0.003 0	0.005 0
	Annual Average (ppm)	ID	0.001	0.001
Carbon monoxide (CO)	Maximum 1-Hour (ppm)[2]	3.30	2.66	3.27
	Maximum 8-Hour (ppm) Days > State Standard (9.0 ppm) Days > Federal Standard (9 ppm)	2.31 0 0	1.86 0 0	2.29 0 0
Fine particulate matter (PM_{10})	State Annual Average (20 µg/m^3)	**27.7**	**31.1**	**23.6**
	Maximum 24-Hour (µg/m^3) [1] Est. Days > State Standard (50 µg/m^3) Est. Days > Federal Standard (150 µg/m^3)	**75.0** **23.5** 0.0	**105.0** **48.6** 0.0	58.8 18.2 0.0
Ultrafine particulate matter ($PM_{2.5}$)	State Annual Average (µg/m^3)	**13.5**	**14.4**	**11.3**
	Maximum 24-Hour (µg/m^3) Est. Days > Federal Standard (35 µg/m^3)	**66.8** **34.1**	**91.0** **27.7**	**51.1** **15.9**

Notes:
> = exceed ppm = parts per million ID = insufficient data Est. = estimated
Exceedances are listed in **bold.**
[1] From the California measurement.
[2] The CARB does not report 1-hour average CO concentrations in its database, only 8-hour CO concentrations. Therefore, the 1-hour CO concentration was derived by dividing the 8-hour concentration by 0.7.
Data is from the Stockton-Hazelton Street Station except for sulfur dioxide, which is from the Fresno station
Source: California Air Resources Board, 2010.

Sensitive Receptors

Individuals who are sensitive to air pollution include children, the elderly, and persons with pre-existing respiratory or cardiovascular illness. For purposes of CEQA, the SJVAPCD considers a sensitive receptor to be a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools.

The nearest sensitive receptors to the project area are located at nearby residences. There are a single-family residence located approximately 300 feet to the north of the project site, single-family residences located within 100 feet to the west of the project boundary, and mobile homes located within 50 feet west of the project boundary.

Greenhouse Gases

Unlike criteria and toxic air pollutants, which are of regional and local concern, greenhouse gases are global pollutants. Greenhouse gases trap heat in the atmosphere. The effect is analogous to the way a greenhouse retains heat. Common greenhouse gases include water vapor, carbon dioxide, methane,

nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities also emit greenhouse gases.

Individual greenhouse gas compounds have varying global warming potential and atmospheric lifetimes. Carbon dioxide, the reference gas for global warming potential, has a global warming potential of one. The global warming potential of a greenhouse gas is a measure of how much a given mass of a greenhouse gas is estimated to contribute to global warming. To describe how much global warming a given type and amount of greenhouse gas may cause, use is made of a metric called the carbon dioxide equivalent. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing greenhouse gas emissions since it normalizes various greenhouse gas emissions to a consistent reference gas, carbon dioxide. For example, methane's global warming potential of 21 indicates that methane has a 21 times greater warming affect than carbon dioxide on a molecule per molecule basis. A carbon dioxide equivalent is the mass emissions of an individual greenhouse gas multiplied by its global warming potential.

Table 3.3-3 summarizes the major greenhouse gases expected to be generated by the project uses.

Table 3.3-3: Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Nitrous oxide	Nitrous oxide is also known as laughing gas and is a colorless greenhouse gas. It has a lifetime of 114 years. Its global warming potential is 310.	Microbial processes in soil and water, fuel combustion, and industrial processes.
Methane	Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 21.	Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, decay of organic matter, and cattle.
Carbon dioxide	Carbon dioxide (CO_2) is an odorless, colorless, natural greenhouse gas. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Hydro-fluorocarbons	Hydrofluorocarbons are a group of greenhouse gases containing carbon, chlorine, and at least one hydrogen atom. Global warming potentials range from 140 to 11,700.	Hydrofluorocarbons are synthetic manmade chemicals used as a substitute for chlorofluorocarbons in applications such as automobile air conditioners and refrigerants.
Sulfur hexafluoride	Sulfur hexafluoride is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential, 23,900.	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas.
Source: Michael Brandman Associates, 2010.		

Emissions

Emissions worldwide were approximately 49,000 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2004, as identified in the Intergovernmental Panel on Climate Change's Fourth Assessment Report. In 2007, emissions in the United States were 7,107 $MMTCO_2e$ and in California were 477 $MTCO_2e$, as identified by the California Air Resources Board's Almanac of Emissions.

Potential Environmental Effects

The International Panel on Climate Change has declared that worldwide, average temperatures are likely to increase by approximately 3 degrees Fahrenheit (°F) to 7°F by the end of the 21st century. However, a global temperature increase does not translate to a uniform increase in temperature in all locations on the earth. Regional climate changes are dependent on multiple variables, such as topography and the effects of natural climatic changes. One region of the earth may experience increased temperature, increased incidents of drought and similar warming effects, whereas another region may experience a relative cooling. Climate change impacts to North America may include diminishing snowpack, increasing evaporation, exacerbated shoreline erosion, exacerbated inundation from sea level rising, increased risk and frequency of wildfire, increased risk of insect outbreaks, increased experiences of heat waves, and rearrangement of ecosystems, as species and ecosystem zones shift northward and to higher elevations.

In California, climate change may result in consequences such as the following (The information is from a document prepared by the California Climate Change Center in 2006 and Moser et al. in 2009.):

- **A reduction in the quality and supply of water to the State from the Sierra snow pack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.
- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of southern California are expected to increase by approximately 30 percent toward the end of the century because more winter rain will stimulate the growth of more plant "fuel" available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- **Reductions in the quality and quantity of certain agricultural products.** Crops that are likely to be hard hit include wine grapes, fruit, nuts, and milk.
- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los

Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if temperature rises are kept in the lower warming range.

- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California's coast have risen about seven inches. If heat-trapping emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.
- **Damage to marine ecosystems and the natural environment.**
- **An increase in infections, disease, asthma, heat stroke/exhaustion, heart attack, stroke, and other health-related problems.**
- **A decrease in the health and productivity of California's forests**.

Although certain environmental effects are widely accepted to be a potential hazard to certain locations, such as rising sea level for low-laying coastal areas, it is currently infeasible to predict all environmental effects of climate change on any one location.

3.3.3 - Regulatory Framework

Air pollutants are regulated at the national, state, and air basin level; each agency has a different level of regulatory responsibility. The United States Environmental Protection Agency (EPA) regulates at the national level. The CARB regulates at the state level and SJVAPCD regulates at the air basin level.

Federal and State

The EPA handles global, international, national, and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards, also known as federal standards or national standards. There are national standards for six common air pollutants, called criteria air pollutants, which were identified from provisions of the Clean Air Act of 1970. The criteria pollutants are:

- Ozone
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Nitrogen dioxide
- Carbon monoxide (CO)
- Lead
- Sulfur dioxide

The national standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants. Primary national standards are the levels of air quality necessary, with an adequate margin of safety, to protect public health, as discussed in Ambient Air Quality Standards summary prepared by the California Air Resources Board.

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain national standards. The State Implementation Plan for the State of California is administered by the CARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. The CARB also administers California Ambient Air Quality Standards for the 10 air pollutants designated in the California Clean Air Act. The 10 state air pollutants are the six national standards listed above as well as the following: visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride.

The national and state ambient air quality standards, the most relevant effects, the properties, and sources of the pollutants are summarized in Table 3.3-4.

Table 3.3-4: Air Pollutants

Air Pollutant	Averaging Time	California Standard	National Standard [a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Ozone	1-Hour	0.09 ppm	—	(a) Decrease of pulmonary function and localized lung edema in humans and animals; (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) increased mortality risk; (d) risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) vegetation damage; (f) property damage.	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), NO_x, and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_x) are mobile sources (on-road and off-road vehicle exhaust).
	8-Hour	0.070 ppm	0.075 ppm			
Carbon monoxide (CO)	1-Hour	20 ppm	35 ppm	(a) Aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; (b) decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) impairment of central nervous system functions; (d) possible increased risk to fetuses.	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.
	8-Hour	9.0 ppm	9 ppm			
Nitrogen dioxide (NO_2)[c]	1-Hour	0.18 ppm	0.100 ppm	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) contribution to atmospheric discoloration.	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides - NO_x (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5). NO_x is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_x can react with compounds to form nitric acid and related particles.	NO_x is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.
	Annual	0.030 ppm	0.053 ppm			

Table 3.3-4 (cont.): Air Pollutants

Air Pollutant	Averaging Time	California Standard	National Standard [a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfur dioxide (SO_2)	1-Hour	0.25 ppm	0.075 ppm[d]	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO_x) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and national standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM_{10}.	Human caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethylsulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.
	3 Hour[1]	—	0.5 ppm			
	24-Hour	0.04 ppm	0.14 ppm			
	Annual	—	0.030 ppm			
Particulate matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) declines in pulmonary function growth in children; (c) increased risk of premature death from heart or lung diseases in the elderly. Daily fluctuations in $PM_{2.5}$ levels have been related to hospital admissions for acute respiratory conditions, school absences, and increased medication use in children and adults with asthma.	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter, (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter.	Stationary sources include fuel combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal, and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust.
	Mean	20 µg/m^3	—			
Particulate matter ($PM_{2.5}$)	24-Hour	—	35 µg/m^3			
	Annual	12 µg/m^3	15.0 µg/m^3			
Sulfates	24-Hour	25 µg/m^3	—	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage.	The sulfate ion is a polyatomic anion with the empirical formula SO_4^{2-}. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.

Table 3.3-4 (cont.): Air Pollutants

Air Pollutant	Averaging Time	California Standard	National Standard [a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Lead[b]	30-day	1.5 µg/m^3	—	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction. The more serious effects of lead poisoning include behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs. Lead may also contribute to high blood pressure and heart disease.	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. An aerosol is a collection of solid, liquid, or mixed-phase particles suspended in the air. Lead was first regulated as an air pollutant in 1976. Leaded gasoline was first marketed in 1923 and was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or national air quality standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering. Lead can be removed from the atmosphere through deposition to soils, ice caps, oceans, and inhalation.
	Quarter	—	1.5 µg/m^3			
	Rolling 3-month average	—	0.15 µg/m^3			
Vinyl chloride[b]	24-Hour	0.01 ppm	—	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, CARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.
Hydrogen sulfide	1-Hour	0.03 ppm	—	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.	Hydrogen sulfide (H_2S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur containing fuels (oil and coal).

Table 3.3-4 (cont.): Air Pollutants

Air Pollutant	Averaging Time	California Standard	National Standard [a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Volatile organic compounds (VOC)		There are no state or national ambient air quality standards for VOCs because they are not classified as criteria pollutants.		Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants.	Reactive organic gases (ROGs), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.
Benzene		There are no ambient air quality standards for benzene.		Short-term (acute) exposure of high doses from inhalation of benzene may cause dizziness, drowsiness, headaches, eye irritation, skin irritation, and respiratory tract irritation, and at higher levels, loss of consciousness can occur. Long-term (chronic) occupational exposure of high doses has caused blood disorders, leukemia, and lymphatic cancer.	Benzene is a VOC. It is a clear or colorless light-yellow, volatile, highly flammable liquid with a gasoline-like odor. The EPA has classified benzene as a "Group A" carcinogen.	Benzene is emitted into the air from fuel evaporation, motor vehicle exhaust, tobacco smoke, and from burning oil and coal. Benzene is used as a solvent for paints, inks, oils, waxes, plastic, and rubber. It is used in the extraction of oils from seeds and nuts and in the manufacture of detergents, explosives, and pharmaceuticals.
Diesel particulate matter (DPM)		There are no ambient air quality standards for DPM.		Some short-term (acute) effects of diesel exhaust exposure include eye, nose, throat, and lung irritation, and can cause coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from	DPM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. The main sources of diesel particulate matter are from combustion of diesel fuel in diesel-powered engines. Such engines can include on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various

Table 3.3-4 (cont.): Air Pollutants

Air Pollutant	Averaging Time	California Standard	National Standard [a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
				respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.	aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	pieces of stationary construction equipment.

Abbreviations:
ppm = parts per million (concentration) $\mu g/m^3$ = micrograms per cubic meter Annual = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter

[a] National standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[c] Effective April 12, 2010, to attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb, or 188 $\mu g/m^3$

[d] To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

Source of effects: South Coast Air Quality Management District, 2007; California Environmental Protection Agency, 2002; California Air Resources Board, 2009b; Environmental Protection Agency, 2007; Environmental Protection Agency, 2000; National Toxicology Program, 2005a.
Source of standards: California Air Resources Board, 2010b
Source of properties and sources: Environmental Protection Agency, 1999; Environmental Protection Agency, 2003; Environmental Protection Agency, 2009; Environmental Protection Agency, 2009b; National Toxicology Program, 2005.

Toxic Air Contaminant Regulation

The California legislature enacted the Toxic Air Contaminant Identification and Control Act (AB 1807; Tanner 1983) governing the release of toxic air contaminants into the air. This law charges CARB with the responsibility for identifying substances as toxic air contaminants, setting priorities for control, adopting control strategies, and promoting alternative processes. The CARB has designated almost 200 compounds as toxic air contaminants. AB 2588, the Air Toxics "Hot Spots" Program, was enacted in 1987, and requires stationary sources to report the types and quantities of certain substances routinely released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels. CARB also prepares the California Toxics Inventory, and provides Risk Management Guidelines for new and modified sources of toxic air contaminants. Additionally, the CARB has implemented control strategies, called Airborne Toxic Control Measures, for a number of compounds that pose high health risk and show potential for effective control, including diesel particulate matter and asbestos. Diesel particulate matter is discussed in Table 3.3-4.

Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States.

Construction sometimes requires the demolition of existing buildings where construction occurs. Buildings often include materials containing asbestos, but no demolition is associated with this project. However, asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest and abdominal cavity), and asbestosis (a non-cancerous lung disease which causes scarring of the lungs).

The CARB has an Air Toxics Control Measure for construction, grading, quarrying, and surface mining operations requiring the implementation of mitigation measures to minimize emissions of

asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity.

San Joaquin Valley Air Pollution Control District

The SJVAPCD is responsible for controlling emissions primarily from stationary sources. The SJVAPCD maintains air quality monitoring stations throughout the basin. The SJVAPCD, in coordination with the eight countywide transportation agencies, is also responsible for developing, updating, and implementing air quality attainment plans for the Air Basin. In addition, in 2002, the SJVAPCD has prepared the GAMAQI, which sets forth recommended thresholds of significance, analysis methodologies, and provides guidance on mitigating significant impacts.

Attainment Status

There are three terms used to describe if an air basin is exceeding or meeting federal and state standards: attainment, nonattainment, and unclassified. Air basins are assessed for each applicable pollutant and receive a designation for each standard based on that assessment. Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the 3-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

Areas are designated attainment or nonattainment on a per-pollutant basis. If an air basin exceeds the form of a federal or state standard, the air basin is designated as "nonattainment" for that air pollutant. An air basin is designated as "attainment" for pollutant if all the standards for that pollutant are met. If there is inadequate or inconclusive data to make a definitive attainment designation for a pollutant, the air basin is considered "unclassified." The current attainment designations for the Air Basin are shown in Table 3.3-5.

Table 3.3-5: Air Basin Attainment Status

Pollutant	Designation	
	Federal	State
Ozone –1-hour	No Federal Standard	Nonattainment/Severe
Ozone – 8-hour	Nonattainment/Serious	Nonattainment
PM_{10}	Attainment	Nonattainment

Table 3.3-5 (cont.): Air Basin Attainment Status

Pollutant	Designation	
	Federal	State
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon monoxide	Attainment/Unclassified	Attainment
Nitrogen dioxide	Attainment/Unclassified	Attainment
Sulfur dioxide	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility-reducing particles	No Federal Standard	Unclassified
Vinyl chloride	No Federal Standard	Attainment
Source: San Joaquin Valley Air Pollution Control District, 2010.		

Current Air Quality Plans

Ozone Plans

The Air Basin is designated nonattainment of state and federal health-based air quality standards for ozone. To meet Clean Air Act requirements for the 1-hour ozone standard, the SJVAPCD adopted an Extreme Ozone Attainment Demonstration Plan in 2004, which has an attainment date of 2010. However, the federal 1-hour ozone standard has been revoked by the EPA and replaced with an 8-hour standard. The planning requirements for the 1-hour plan remain in effect until replaced by a federal 8-hour ozone attainment plan. The EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan, including revisions to the plan, on March 8, 2010, effective April 7, 2010.

The Air Basin is classified as serious nonattainment for the federal 8-hour ozone standard. On April 30, 2007, the SJVAPCD's Governing Board adopted the 2007 Ozone Plan, which contained analysis showing a 2013 attainment target to be unfeasible. The 2007 Ozone Plan calls for a 75-percent reduction in NO_x emissions and a 25-percent reduction in ROG emissions by the year 2023. CARB approved the plan in June 2007. On April 15, 2010, the EPA signed a final rule to grant requests from the State of California to reclassify 8-hour ozone nonattainment areas in San Joaquin Valley from "serious" to "extreme." State ozone standards do not have an attainment deadline but require implementation of all feasible measures to achieve attainment at the earliest date possible.

Particulate Matter Plans

The Air Basin was designated nonattainment of state and federal health-based air quality standards for PM_{10}. To meet Clean Air Act requirements for the PM_{10} standard, the SJVAPCD adopted a PM_{10} Attainment Demonstration Plan (Amended 2003 PM_{10} Plan and 2006 PM_{10} Plan), which has an attainment date of 2010.

The SJVAPCD adopted the 2007 PM_{10} Maintenance Plan and Request for Redesignation (2007 PM_{10} Plan). The 2007 PM_{10} Plan contains modeling demonstrations that show the Air Basin will not exceed the federal PM_{10} standard for 10 years after the expected EPA redesignation, monitoring, and verification measures, and it provides a contingency plan. Even though the EPA revoked the federal annual PM_{10} standard, the 2007 PM_{10} Plan addresses both the annual and 24-hour standards because both standards were included in the EPA-approved SIP. The EPA finalized the determination that the Air Basin attained the PM_{10} standards on October 17, 2007, effective October 30, 2007. On September 25, 2008, the EPA redesignated the Air Basin as attainment for the federal PM_{10} standard and approved the PM_{10} Plan.

The Air Basin is also designated nonattainment for the new federal $PM_{2.5}$ annual standard. The SJVAPCD adopted the 2008 $PM_{2.5}$ Plan on April 30, 2008. This Plan demonstrates the Air Basin will attain the 1997 federal standard by 2014 and make progress toward attaining the 2006 federal 24-hour standard. Barring delays due to legal challenges, the SJVAPCD estimates that attainment plans for the federal 2006 standard will be required by 2012 or 2013 with an attainment deadline of 2020. Measures contained in the 2003 PM_{10} Plan will also help reduce $PM_{2.5}$ levels and will provide progress toward attainment until new measures are implemented for the $PM_{2.5}$ Plan, if needed.

Applicable Rules

The SJVAPCD rules and regulations that may apply to the project include but are not limited to the following:

- SJVAPCD Rule 2201 – New and Modified Stationary Source Review.
- SJVAPCD Rule 4002 – National Emission Standards for Hazardous Air Pollutants.
- SJVAPCD Rule 4102 – Nuisance. The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials.
- SJVAPCD Rule 4601 – Architectural Coatings. The purpose of this rule is to limit ROG emissions from architectural coatings. Emissions are reduced by limits on ROG content and providing requirements on coatings storage, cleanup, and labeling.
- SJVAPCD Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit ROG emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641.
- SJVAPCD Rule 4901 – Wood Burning Heaters. The rule requires that no person shall sell, offer for sale, supply, install, or transfer a new wood burning heater unless it is an EPA Phase II Certified or is a pellet-fueled wood burning heater. No person shall advertise, sell, offer for sale, supply, install, or transfer a used wood burning heater unless it has been rendered permanently inoperable, or is EPA Phase II Certified, or is a pellet-fueled wood burning heater,

or is a low mass fireplace, masonry heater, or other wood-burning device of a make and model that meets EPA emission targets and has been approved in writing by the APCO.

- SJVAPCD Regulation VIII – Fugitive PM_{10} Prohibitions. Rule 8011-8081 are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc.

Compliance with Rule 9510 (ISR)

SJVAPCD Rule 9510 – Indirect Source Review (ISR) reduces the impact of NO_x and PM_{10} emissions from growth in the Air Basin. The rule places application and emission reduction requirements on development projects meeting applicability criteria in order to reduce emissions through onsite mitigation, offsite SJVAPCD-administered projects, or a combination of the two. The project will submit an Air Impact Assessment application in accordance with Rule 9510's requirements.

Compliance with SJVAPCD Rule 9510 reduces the emissions impact of the project through incorporation of onsite measures as well as payment of an offsite fee that funds emission reduction projects in the Air Basin. The emissions analysis for Rule 9510 is highly detailed and is dependent on the exact use design that is expected to be constructed or installed. Minor changes to components between the CEQA analysis and construction often occur. An example of such a change is a change in square footage. The required amounts of emission reductions required by Rule 9510 are as follows:

Construction Exhaust:	20 percent of the total NO_x emissions, and 45 percent of the total PM_{10} emissions.
Operational Emissions:	33 percent of NO_x emissions over the first 10 years, and 50 percent of the PM_{10} emissions over the first 10 years.

City of Manteca

The City of Manteca General Plan establishes the following goals and policies associated with air quality:

- **Goal AQ-1:** Improve air quality by:
  - Achieving and maintaining ambient air quality standards established by the U.S. Environmental Protection Agency, the California Air Resources Board, and the San Joaquin Air Pollution Control District;
  - Minimizing public exposure to toxic or hazardous air pollutants; and
  - Minimizing public exposure to pollutants that create a public nuisance, such as unpleasant odors.
- **Goal AQ-2:** Integrate air quality planning with land use and transportation planning processes in order to reduce vehicle miles traveled in the City and by commuters.

- **Goal AQ-3:** Increase opportunities for alternatives to internal combustion automobiles including, but not limited to, public transportation, bicycles, walking and alternative fuel vehicles including hybrid gas-electric, electric, and compressed natural gas.
- **Goal AQ-4:** Reduce air emissions through energy conversation.
- **Policy AQ-P-2:** Develop a land use plan that will help to reduce the need for trips and will facilitate the common use of public transportation, walking, bicycles, and alternative fuel vehicles.
- **Policy AQ-P-3:** Segregate and provide buffers between land uses that typically generate hazardous or obnoxious fumes and residential or other sensitive land uses.
- **Policy AQ-P-4:** Develop and maintain street systems that provide for efficient traffic flow and thereby minimize air pollution from automobile emissions.
- **Policy AQ-P-5:** Develop and maintain circulation systems that provide alternatives to the automobile for transportation, including bicycle routes, pedestrian paths, bus transit, and carpooling.
- **Policy AQ-P-7:** New construction will be managed to minimize fugitive dust and construction vehicle emissions.
- **Policy AQ-P-10:** Encourage energy efficient building designs.

3.3.4 - Greenhouse Gas Regulatory Framework

International and National

International and federal agreements have been enacted to deal with climate change issues. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change. Under the Convention, governments gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

A particularly notable result of the United Nations Framework Convention on Climate Change efforts is a treaty known as the Kyoto Protocol, which went into effect on February 16, 2005. When countries sign the Kyoto Protocol, they demonstrate their commitment to reduce their emissions of greenhouse gases or engage in emissions trading. More than 170 countries are currently participating in the Kyoto Protocol. Industrialized countries are required to reduce their greenhouse gas emissions by an average of 5 percent below their 1990 levels by 2012. In 1998, United States Vice President Al Gore symbolically signed the Protocol; however, in order for the Kyoto Protocol to be formally

ratified, the United States Congress must approve it. Congress did not do this during the Clinton Administration. Former President George W. Bush did not submit the Protocol to Senate to be ratified based on the exemption granted to China. President Barack Obama has not taken action regarding the Kyoto Protocol because it is about to end.

Massachusetts v. EPA (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that the EPA regulate four greenhouse gases, including carbon dioxide, under Section 202(a)(1) of the Clean Air Act. A decision was made on April 2, 2007, in which the Supreme Court held that petitioners have a standing to challenge the EPA and that the EPA has statutory authority to regulate greenhouse gases emissions from new motor vehicles.

The Consolidated Appropriations Act of 2008 (HR 2764): Passed in December 2007, this law requires the establishment of mandatory greenhouse gas reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule. The rule requires reporting of greenhouse gas emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of greenhouse gas emissions are required to submit annual reports to the EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under Section 202(a) of the Clean Air Act: (1) Current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations. (2) The combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

Congress first passed the Corporate Average Fuel Economy law in 1975, which is to increase the fuel economy of cars and light trucks thereby reducing energy consumption. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce greenhouse gas emissions and improve fuel economy for new cars and trucks sold in the United States. The first phase of the national program would apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards would cut carbon dioxide emissions by an

estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). The EPA and the National Highway Safety Administration will now begin working on a second-phase joint rulemaking to establish national standards for light-duty vehicles for model years 2017 and beyond.

California

There has been significant legislative and regulatory activity that affects climate change and greenhouse gases in California, as discussed below.

Title 24. Although not originally intended to reduce greenhouse gases, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. The 2008 standards became effective January 1, 2010. The requirement for when the 2008 standards must be followed is dependent on when the application for the building permit is submitted. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

California Green Building Standards. On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which will go into effect on January 1, 2011. The Code is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings.

The California Green Building Standards Code does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy. Enforcement is generally through the local building official.

The California Green Building Standards Code will require:

- A minimum 50-percent diversion of construction and demolition waste from landfills, increasing voluntarily to 65 and 75 percent for new homes and 80 percent for commercial projects;
- 20-percent mandatory reduction in indoor water use with voluntary goal standards for 30-, 35- and 40-percent reductions;

- Separate water meters for buildings in excess of 50,000 square feet or buildings projected to consume more than 1,000 gallons per day;
- Moisture-sensing irrigation systems for larger landscaped areas;
- Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring and particle board;
- Mandatory inspections of energy systems (e.g., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies.

Pavley Regulations. California AB 1493, enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. The regulation was stalled by automaker lawsuits and by the EPA's denial of an implementation waiver. On January 21, 2009, the CARB requested that the EPA reconsider its previous waiver denial. On January 26, 2009, President Obama directed that the EPA assess whether the denial of the waiver was appropriate. On June 30, 2009, the EPA granted the waiver request, which begins with motor vehicles in the 2009 model year.

The standards phase in during the 2009 through 2016 model years. When fully phased in, the near term (2009-2012) standards will result in about a 22-percent reduction compared with the 2002 fleet, and the mid-term (2013-2016) standards will result in about a 30-percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.

Executive Order S-3-05. California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following reduction targets for greenhouse gas emissions:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be an aggressive, but achievable, mid-term target. The Climate Action Team's Report to the Governor in 2006 contains recommendations and strategies to help ensure the 2020 targets in Executive Order S-3-05 are met.

Low Carbon Fuel Standard - Executive Order S-01-07. The Governor signed Executive Order S-01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce

the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low-Carbon Fuel Standard and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to CARB for consideration as an "early action" item under AB 32. The CARB adopted the Low Carbon Fuel Standard on April 23, 2009.

SB 97. Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)." Section 21097 was also added to the Public Resources Code. It provided CEQA protection until January 1, 2010 for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006, in stating that the failure to adequately analyze the effects of greenhouse gases would not violate CEQA.

On April 13, 2009, OPR submitted to the Secretary for Natural Resources its recommended amendments to the CEQA Guidelines for addressing greenhouse gas emissions, as required by SB 97. On July 3, 2009, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting these amendments pursuant to Public Resources Code section 21083.05. Following a 55-day public comment period and two public hearings, the Natural Resources Agency proposed revisions to the text of the proposed Guidelines amendments.

The Natural Resources Agency transmitted the adopted amendments and the entire rulemaking file to the Office of Administrative Law on December 31, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010.

AB 32. The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that greenhouse gases emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. CARB is the state agency charged with monitoring and regulating sources of greenhouse gases. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The CARB approved the 1990 greenhouse gas emissions level of 427 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) on December 6, 2007. Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. Emissions in 2020 in a business as usual scenario are estimated to be 596 $MMTCO_2e$.

Under AB 32, the CARB published its Final Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California. Discrete early action measures are currently underway or are enforceable by January 1, 2010. The CARB has 44 early action measures that apply to the transportation, commercial, forestry, agriculture, cement, oil and gas, fire suppression, fuels, education, energy efficiency, electricity, and waste sectors. Of these early action measures, nine are considered discrete early action measures, as they are regulatory and enforceable by January 1, 2010. The CARB estimates that the 44 recommendations are expected to result in reductions of at least 42 $MMTCO_2e$ by 2020, representing approximately 25 percent of the 2020 target.

The CARB approved the Climate Change Scoping Plan in December 2008. The Scoping Plan contains measures designed to reduce the State's emissions to 1990 levels by the year 2020. The Scoping Plan identifies recommended measures for multiple greenhouse gas emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. The measures in the Scoping Plan will be in place by 2012. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 greenhouse gas target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related greenhouse gas emissions for regions throughout California and pursuing policies and incentives to achieve those targets;

- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. Capped strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion of these emissions within the cap-and trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. Uncapped strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional greenhouse gas emission reductions.

Executive Order S-13-08. Executive Order S-13-08 indicates that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, in December 2009, the California Natural Resources Agency released its 2009 California Climate Adaptation Strategy. The Strategy is the " . . . first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

SB 1078, SB 107, and Executive Order S-14-08. On September 12, 2002, Governor Gray Davis signed SB 1078 requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020.

San Joaquin Valley Air Pollution Control District

Climate Change Action Plan

On August 21, 2008, the SJVAPCD Governing Board approved the SJVAPCD's proposal, called the Climate Change Action Plan, to begin a public process to bring together stakeholders, land use agencies, environmental groups, and business groups, and conduct public workshops to develop comprehensive policies for CEQA guidelines and a carbon exchange bank, and voluntary greenhouse

gas emissions mitigation agreements for the Governing Board's consideration. The Climate Change Action Plan contained the following goals and actions:

Goals:

1. Assist local land-use agencies with California Environmental Quality Act (CEQA) issues relative to projects with greenhouse gas emissions increases.
2. Assist Valley businesses in complying with mandates of AB 32 (Global Warming Solutions Act of 2006).
3. Ensure that climate protection measures do not cause increases in toxic or criteria pollutants that adversely impact public health or environmental justice communities.

Actions:

1. Authorize the Air Pollution Control Officer to develop greenhouse gas significance threshold(s) or other mechanisms to address CEQA projects with greenhouse gas emissions increases. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in spring 2009.
2. Authorize the Air Pollution Control Officer to develop necessary regulations and instruments for establishment and administration of the San Joaquin Valley Carbon Exchange Bank for voluntary greenhouse gas reductions created in the Valley. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in spring 2009.
3. Authorize the Air Pollution Control Officer to enhance the District's existing criteria pollutant emissions inventory reporting system to allow businesses subject to AB 32 emission reporting requirements to submit simultaneous streamlined reports to the District and the state of California with minimal duplication.
4. Authorize the Air Pollution Control Officer to develop and administer voluntary greenhouse gas emission reduction agreements to mitigate proposed greenhouse gas increases from new projects.
5. Direct the Air Pollution Control Officer to support climate protection measures that reduce greenhouse gas emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted area.

SJVAPCD CEQA Greenhouse Gas Guidance

On December 17, 2009, the SJVAPCD adopted Addressing Greenhouse Gas Emission Impacts under the California Environmental Quality Act. This guidance is intended to assist land-use agencies in

addressing the impacts of greenhouse gases in CEQA documents. The guidance establishes a streamlined process that can be used to evaluate the significance of project specific greenhouse gas emission impacts on climate change, based on the use of Best Performance Standards to reduce project specific greenhouse gas emissions. This guidance is discussed in Impact AIR-7.

San Joaquin Valley Carbon Exchange

The SJVAPCD initiated work on the San Joaquin Valley Carbon Exchange in November 2008. The purpose of the carbon exchange is to quantify, verify, and track voluntary greenhouse gas emissions reductions generated within the San Joaquin Valley. To investigate the various issues concerning the development of a mechanism to register greenhouse gas emission reductions, the SJVAPCD formed a technical workgroup consisting of SJVAPCD staff, land use agency representatives, industry representatives, agricultural representatives, environmental group representatives, and other interested parties.

While the Climate Change Action Plan indicated that the greenhouse gas emission reduction program would be called the San Joaquin Valley Carbon Exchange, SJVAPCD staff has proposed to incorporate a method to register voluntary greenhouse gas emission reductions into its existing Rule 2301- Emission Reduction Credit Banking through amendments of the rule.

In its present draft form, the amendments to Rule 2301 would provide a mechanism to preserve voluntary, high-quality greenhouse gas emission reductions. The draft rule will allow the use of registered greenhouse gas emission reductions for any purpose and will not impose any restrictions on their use. The draft amendments to Rule 2301 will allow greenhouse gas emission reductions that fall into two different categories to be registered with the SJVAPCD: non-protocol greenhouse gas emission reductions and protocol-based greenhouse gas emission reduction credits.

The non-protocol based reductions would be quantified using the criteria in Rule 2301; i.e., that the emission reductions be real, enforceable, permanent, surplus, and quantifiable. Emission reductions would not be required to be additional; in other words, greenhouse gas emission reductions that occur as a collateral benefit of another requirement may qualify for registration, provided they are surplus of existing regulations. Emission Reduction Credits quantified without CARB-approved protocols could likely be retired as one possible method to provide mitigation for a project's greenhouse gas emissions as part of the CEQA process, if approved by the lead agency.

The reductions rely on a CARB-approved greenhouse gas emission reduction project protocol. CARB approved greenhouse gas emission reduction project protocols include detailed procedures on how to quantify emission reductions for specific project types and specific criteria to ensure that the emission reductions are additional. To date, there are three CARB-approved greenhouse gas emission reduction project protocols—forestry preservation, urban forestry, and manure management.

City of Manteca Greenhouse Gas Regulation and Programs

EasyGreen™

Households have the option to sign up for EasyGreen™, which manages the unit's central air conditioner, with a small sensor installed on the air conditioner and in the home. The sensor manages the air conditioner to balance comfort with electricity cost, by reducing electricity used billed at the highest tiers.

3.3.5 - Methodology

The methodology follows the GAMAQI, which sets forth recommended thresholds of significance, analysis methodologies, and provides guidance on mitigating significant impacts. Detailed methodology is described in each of the Impact sections below.

3.3.6 - Thresholds of Significance

Appendix G, Environmental Checklist, of the CEQA Guidelines establishes significance criteria for assessing the significance of air quality and greenhouse gas emissions impacts resulting from the implementation of the proposed project. Where available, the significance criteria established by a local air district such as the San Joaquin Valley Air Pollution Control District may be relied upon to make the following determinations. Would the project:

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

b.) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c.) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

d.) Expose sensitive receptors to substantial pollutant concentrations?

e.) Create objectionable odors affecting a substantial number of people?

f.) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

g.) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

3.3.7 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Air Quality Violations – Construction and Operational Emissions

Impact AIR-1: **Project construction and operational emissions may violate an air quality standard or contribute substantially to an existing or projected air quality violation.**

Thresholds of Significance

The SJVAPCD indicates that all control measures in Regulation VIII are required for all construction sites by regulation. The SJVAPCD's GAMAQI lists additional measures that may be required because of sheer project size or proximity of the project to sensitive receptors. If all appropriate "enhanced control measures" in the GAMAQI are not implemented for these very large or sensitive projects, then construction impacts would be considered significant (unless the Lead Agency provides a satisfactory detailed explanation as to why a specific measure is unnecessary). The GAMAQI also lists additional control measures (Optional Measures) that may be implemented if further emission reductions are deemed necessary by the Lead Agency.

The GAMAQI does not require construction emission quantification; however, the SJVAPCD indicated that with the requirement to quantify construction emissions for Rule 9510 and the availability of modeling tools to quantify the emissions, the SJVAPCD now recommends construction emission quantification for all projects large enough to trigger Rule 9510 applicability (i.e., 50 residential units or more); therefore, Rule 9510 applies to the project.

Ozone is a secondary pollutant that can be formed miles away from the source of emissions through reactions of ROG and NO_x emissions in the presence of sunlight. Therefore, ROG and NO_x are termed ozone precursors. The Air Basin often exceeds the ozone standards. Therefore, if the project emits a substantial quantity of ozone precursors, the project may contribute to an exceedance of the ozone standard. The SJVAPCD established significance thresholds for ozone precursors, ROG and NO_x, and has published them in its GAMAQI. For typical projects, operation-related emissions that exceed the threshold of 10 tons per year for ROG or NO_x would be considered significant. The threshold for PM_{10} is not identified in the GAMAQI; however, pursuant to direction provided by the SJVAPCD, 15 tons per year is used as a threshold for large projects such as the project.

The GAMAQI does not have quantitative thresholds for construction emissions. However, the GAMAQI does have operational thresholds for ROG and NO_x of 10 tons per year for each. Since the GAMAQI was published, the SJVAPCD has been recommending use of a PM_{10} threshold of 15 tons per year. Because the Air Basin is in nonattainment for $PM_{2.5}$, the threshold for $PM_{2.5}$ for this project will be 9 tons per year. The justification for this number is that $PM_{2.5}$ is in nonattainment and should have a more stringent threshold than PM_{10} to provide a worst-case assessment. The annual standard for PM_{10} is 20 $\mu g/m^3$ and the annual standard for $PM_{2.5}$ is 12 $\mu g/m^3$. Therefore, the ratio of PM_{10} to $PM_{2.5}$ results in a threshold for $PM_{2.5}$ of 9 tons per year.

The annual significance thresholds to be used for the project for operational and construction emissions are as follows:

- 10 tons per year ROG
- 10 tons per year NO_x
- 15 tons per year PM_{10}
- 9 tons per year $PM_{2.5}$

Project Analysis

Existing Emissions

Most of the site has been used for agricultural purposes, which has fugitive dust (PM_{10} and $PM_{2.5}$) from tilling and windblown dust. The agricultural equipment also emits exhaust (ROG, NO_x, CO, PM_{10}, and $PM_{2.5}$). However, the existing emissions are not estimated to provide a worst-case analysis.

Construction

Construction of the project would result in the generation of air pollutant emissions. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from onsite and offsite activities. Onsite emissions principally consist of exhaust emissions (NO_x, SO_x, CO, ROG, PM_{10}, and $PM_{2.5}$) from heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Additionally, paving operations and application of architectural coatings would release ROG emissions. Offsite emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$).

The construction emissions were derived using the Urban Emissions Model, URBEMIS 2007 Version 9.2.4 (URBEMIS). Note that specific details regarding construction, including the length of construction, the construction equipment list, and construction phase details, were not available for incorporation into this assessment. Therefore, a worst-case scenario was developed to portray the maximum emissions on any one day during the various construction activities, as described below.

Phasing. It was assumed for purposes of this analysis that construction would occur in 2012 and full operation would begin in 2013. It was assumed that construction equipment would operate a maximum of 10 hours per day and 6 days per week. To reduce noise impacts, onsite construction is limited to between 7 a.m. and 8 p.m.

Removal of onsite trees and demolition of onsite structures. There are existing almond trees onsite, which will be removed and hauled to the south side of the levee prior to the start of the project's mass grading operation. There they will be cut up, chipped, and mixed into the soil where the wood will decompose naturally, adding nutrients to the soil. The area of the almond trees is approximately 94 acres. There are approximately 10,000 square feet of structures that would be demolished on the site, assuming 3 feet of demolished material yield 30,000 cubic feet (1,111 cubic yards) of material. Since there is no default URBEMIS equipment fleet for these activities, it is

assumed that the equipment list would be as follows: 2 tractors/loaders, 1 excavator, 1 water truck, 1 crushing/processing equipment, and 1 off-highway truck.

Grading. The following assumptions were used to estimate grading emissions:

- Acreage disturbed per day: 70 acres—one-fourth of the total acreage disturbed (278 acres)
- Duration: 22 days
- Fugitive dust "low level of detail" emission rate: assuming 730,000 cubic yards of earthwork over 22 days, which equals approximately 33,000 cubic yards per day
- Equipment list: the URBEMIS default

Compliance with SJVAPCD Regulation VIII is assumed. The reductions for compliance with this regulation are demonstrated in URBEMIS as "mitigation," even though technically they are not mitigation. The applicable control measures include but are not limited to those contained in Table 3.3-6.

Table 3.3-6: Compliance with Fugitive Dust Regulation VIII

Regulation VIII Control Measures		URBEMIS Reduction
Pre-Activity	A1: Pre-water site sufficient to limit visible dust emissions to 20 percent opacity A2: Phase work to reduce the amount of disturbed surface area at any one time.	Water exposed surfaces two times per day
Active Operations	B1: Apply water or chemical/organic stabilizers/suppressants sufficient to limit visible dust emissions to 20 percent opacity; or B2: Construct and maintain wind barriers sufficient to limit visible dust emissions to 20 percent opacity. If utilizing wind barriers, control measure B1 above shall also be implemented. B3: Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit visible dust emissions to 20 percent opacity and meet the conditions of a stabilized unpaved road surface.	Water exposed surfaces two times per day (B1) Manage haul road dust (B3)
Temporary Stabilization During Periods of Inactivity	C1: Restrict vehicular access to the area; and C2: Apply water or chemical/organic stabilizers/suppressants, sufficient to comply with the conditions of a stabilized surface. If an area having 0.5 acre or more of disturbed surface area remains unused for seven or more days, the area must comply with the conditions for a stabilized surface area as defined in section 3.58 of Rule 8011.	Apply soil stabilizers to inactive areas (C2)
All times	An owner/operator shall limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.	Reduce speed on unpaved roads to 15 miles per hour

Table 3.3-6 (cont.): Compliance with Fugitive Dust Regulation VIII

Regulation VIII Control Measures	URBEMIS Reduction
Notes: Regulation VIII Control Measures are from Rule 8021 URBEMIS reduction refers to the equivalent reduction in the URBEMIS model Sources: San Joaquin Valley Air Pollution Control District, 2010.	

Paving. Default URBEMIS values were used for paving operations based on the acreage to be paved, which was assumed to be 25 percent of the acreage covered by residential units (203 acres x 25 percent = approximately 50 acres).

Building Construction. There would be approximately 1,650 residential units constructed within approximately 271 days, or 6 units constructed per day on average. Therefore, additional construction equipment would be required. In addition to the default URBEMIS construction equipment, 4 generator sets, 2 welders, 2 forklifts, and 2 other equipment were added. In addition, the horsepower for the generator sets was changed from 49 to 400, to account for larger equipment that may be required.

Architectural Coating/Painting. The URBEMIS defaults were used for this phase.

Construction Emissions. Air pollutant emissions during construction of the project are shown in Table 3.3-7. As shown in the table, ROG and NO_x emissions during construction are over the significance thresholds and are therefore significant.

Table 3.3-7: Air Pollutant Emissions – Construction

Phase	Source	Emissions (tons per year)			
		ROG	NO_x	PM_{10}	$PM_{2.5}$
Construction	Removal of trees and demolition of structures	<0.1	0.2	0.2	0.1
	Grading	0.1	1.1	5.1	1.1
	Paving	0.1	0.4	<0.1	<0.1
	Building	3.8	26.4	1.4	1.1
	Coating	19.0	<0.1	<0.1	0.0
Total		**23.0**	**28.1**	**6.7**	**2.3**
Significance threshold		10	10	15	9
Exceed significance threshold?		**Yes**	**Yes**	No	No
Notes: ROG = reactive organic gases; NO_x = nitrogen oxides; PM_{10} and $PM_{2.5}$ = particulate matter; <0.1 = less than 0.1 Note that emissions for Rule 9510 may differ from the emissions listed herein, due to potentially different requirements in estimating the emissions. Source: Michael Brandman Associates, 2010.					

Operation

Operational emissions would occur once the residential units are occupied. Emissions were estimated using the URBEMIS model. Emissions would be from motor vehicles and area sources (natural gas, hearth, landscape, consumer products, and architectural coating).

Motor Vehicles. Emissions from motor vehicles refer to exhaust emissions from the motor vehicles (cars, light duty trucks, etc.) that would go to and from the project site. The motor vehicle trip generation rates are from the project traffic study, which is contained in Appendix C of this EIR. The "rural" option was selected, which has greater vehicle miles traveled, as the project location is rural compared with other more urban or suburban locations. Motor vehicle emissions were estimated for the year 2013. Motor vehicle emissions decline in future years, because as time goes on, older vehicles will be retired and new, cleaner vehicles will be placed in service. New vehicles have fewer emissions, due to advances in technology and compliance with increasingly stringent emission control standards. Note that a park was included in the land use section of URBEMIS to account for the acreage attributed to the park, and to ensure that construction-related emissions were estimated appropriately. The traffic study does not attribute a trip generation rate for the parks, as it is assumed that visitors to the parks would be internal residents; therefore, the trips would be internal to the project. The trips to the interior parks are included within the residential trip rates.

Natural Gas. Air pollutants are emitted when natural gas is burned. In general, natural gas could be used to heat the residential units, power dryers, heat water, and/or for natural gas kitchen stoves. The URBEMIS default for natural gas used is changed to 4,000 cubic feet per month, to be consistent with the estimates in Section 3.12, Public Services and Utilities.

Hearth. Hearth emissions result from when natural gas or wood is burned in a fireplace or wood stove. According to SJVAPCD Rule 4901, wood burning fireplaces are not allowed in new residential development. In addition, no more than two EPA Phase II Certified wood burning heaters per acre can be installed in any new residential development with a density equal to or greater than three dwelling units per acre. Therefore, since the residential development is to occur on 300 acres, approximately 600 EPA Phase II Certified wood burning heaters can be installed on the project site, or 36 percent of the residential units. Emissions were estimated using emission factors published by the EPA. Calculations are shown in Appendix C.

Landscape. Landscape emissions are emissions from gasoline powered lawn mowers, leaf blowers, and other equipment used for landscaping. The default URBEMIS values were used for this category.

Consumer Products. Consumer products are generated from source such as air fresheners, automotive products, household cleaners, and personal care products. The default URBEMIS values were used for this category.

Architectural Coatings. Architectural coatings are ROG emissions from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings. The default URBEMIS values were used for this category.

Operational Emissions. Air pollutant emissions during operation of the project are shown in Table 3.3-8. As shown in the table, emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$ during operation are over the significance thresholds. Emissions of ozone precursor pollutants (ROG and NO_x) and particulate matter (PM_{10} and $PM_{2.5}$) are significant.

Table 3.3-8: Air Pollutant Emissions – Operation

Phase	Source	Emissions (tons per year)			
		ROG	NO_x	PM_{10}	$PM_{2.5}$
Operation	Natural gas	0.2	2.3	0.0	0.0
	Hearth	5.1	0.8	4.4	4.4
	Landscape	0.9	0.1	<0.1	<0.1
	Consumer products	10.9	—	—	—
	Architectural coatings	1.9	—	—	—
	Motor vehicles	25.1	47.4	24.6	5.8
Total		**44.1**	**50.6**	**29.0**	**10.2**
Significance threshold		10	10	15	9
Exceed significance threshold?		**Yes**	**Yes**	**Yes**	**Yes**

Notes:
ROG = reactive organic gases; NO_x = nitrogen oxides; PM_{10} and $PM_{2.5}$ = particulate matter; <0.1 = less than 0.1
Note that emissions for Rule 9510 may differ from the emissions listed herein, due to potentially different requirements in estimating the emissions. Emissions are estimated using URBEMIS, with the exception of hearth emissions.
Source: Michael Brandman Associates, 2010 .

Summary

As indicated above, construction and operational emissions of ROG and NO_x exceed the ozone precursor thresholds, which means that the project may contribute to a violation of the ozone standards. During operation, emissions of PM_{10} and $PM_{2.5}$ exceed the significance thresholds, which means that the project may contribute to a violation of the PM_{10} and $PM_{2.5}$ standards.

The Air Basin is in attainment for the nitrogen dioxide ambient air quality standards. The national ambient air quality standard for 1-hour nitrogen dioxide is 0.100 ppm (3-year average of 98th percentile), effective on April 12, 2010. As shown in Table 3.3-2, the highest 1-hour concentration of nitrogen dioxide is 0.076 ppm, which is below 0.100 ppm. Project emissions of NO_x exceed the ozone precursor threshold of 10 tons per year. The ozone threshold was not set to determine exceedances of the nitrogen dioxide standard. Even though project emissions of NO_x are relatively high, the emissions will be distributed throughout the Air Basin and will be dispersed. Compliance

with Rule 9510 will also reduce NO_x emissions in the Air Basin. However, to be conservative and because there is no certain way to determine the impact of exceeding the NO_x emission threshold on a regional basis, this impact is potentially significant and the project could contribute to an exceedance of the nitrogen dioxide standard. Accordingly, mitigation is proposed to reduce project-related emissions.

As shown in Table 3.3-9, application of the included mitigation identified below reduces the significance of construction related ROG emissions. Mitigation also reduces the significance of operational $PM_{2.5}$ emissions. However, construction NO_x emissions are still over the significance thresholds. In addition, operational emissions would exceed the significance thresholds for ROG, NO_x, and PM_{10}.

Table 3.3-9: Air Pollutant Emissions (with Reductions from Mitigation Measures)

Phase	Source	Emissions (tons per year)			
		ROG	NO_x	PM_{10}	$PM_{2.5}$
Construction	Removal of onsite trees and demolition of structures	<0.1	0.2	0.2	0.1
	Grading	0.1	1.1	5.1	1.1
	Paving	0.1	0.4	<0.1	<0.1
	Building	3.0	15.1	1.1	0.8
	Coating	1.5	<0.1	<0.1	0.0
Reduction from Rule 9510		0.0	(3.4)	(2.9)	0.0
Total		4.7	**13.4**	3.5	2.0
Significance threshold		10	10	15	9
Exceed significance threshold?		No	**Yes**	No	No
Operation	Natural gas	0.2	2.0	0.0	0.0
	Hearth	3.8	0.7	3.1	3.1
	Landscape	0.9	0.1	<0.1	<0.1
	Consumer products	10.9	—	—	—
Operation (*cont.*)	Architectural coatings	1.9	—	—	—
	Motor vehicles	25.1	47.4	24.6	5.8
Reduction from Rule 9510		0.0	(10.4)	(12.5)	0.0
Total		42.8	40.2	15.2	8.9
Significance threshold		10	10	15	9
Exceed significance threshold?		**Yes**	**Yes**	**Yes**	No

Table 3.3-9 (cont.): Air Pollutant Emissions (with Reductions from Mitigation Measures)

Phase	Source	Emissions (tons per year)			
		ROG	NO_x	PM_{10}	$PM_{2.5}$

Notes:
ROG = reactive organic gases; NO_x = nitrogen oxides; PM_{10} and $PM_{2.5}$ = particulate matter; <0.1 = less than 0.1
Note that emissions for Rule 9510 may differ from the emissions listed herein, due to potentially different requirements in estimating the emissions.
Mitigation Measure AIR-1a is attributed in URBEMIS by reducing the number of generator sets in the construction related building phase to zero—the mitigated values are from URBEMIS.
Mitigation Measure AIR-1b reduces unmitigated VOC emissions from construction related coatings by 92 percent (this was calculated by dividing 10 grams per liter, which is the value listed in the mitigation, to the URBEMIS value of 130 grams per liter in paints, and then subtracting 1 and multiplying by 100).
Mitigation Measure AIR-1c requires compliance with Rule 9510. To reduce construction emissions, the rule requires a reduction of 20 percent NO_x emissions and 45 percent PM_{10} exhaust emissions. The rule also requires a 33.3 percent reduction of the project's operational baseline NO_x emissions over a period of 10 years, which equates to an approximate 25 percent reduction in the first year. The rule requires a reduction of 50 percent of the project's operational baseline PM_{10} emissions over a period of 10 years, which equates to approximately a 50-percent reduction in the first year. These emission reductions can be met through a combination of onsite measures or offsite fees. Note that other mitigation measures contained in other impact areas (such as TRANS-6a and TRANS-6b) are not accounted for since Rule 9510 may account for those reductions.
Mitigation Measure AIR-1d reduces operational hearth emissions.
Mitigation Measure AIR-1e reduces natural gas emissions by 10 percent.
Source: Michael Brandman Associates, 2010.

Other Pollutants

Discussion of project emissions of carbon monoxide is contained within impact AIR-2.

The project would produce minimal emissions of sulfur oxides (SO_x), as there are regulations for reducing SO_x from fuel. As shown in the URBEMIS output in Appendix C, SO_x emissions range from zero to 0.4 tons per year. As shown in Table 3.3-2, the highest background 24-hour concentration of sulfur dioxide is 0.007 ppm, substantially under the state ambient air quality standard of 0.04 ppm. Project emissions would not cause or contribute to an air quality standard violation for sulfur dioxide. This impact is less than significant.

Other pollutants such as visibility reducing particles, lead, hydrogen sulfide, and vinyl chloride emissions would either not be emitted or would be at low levels. This impact is less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures TRANS-6a, TRANS-6b, TRANS-6c, and the following measures.

MM AIR-1a During construction activities, the construction contractor shall implement the following air emissions reduction measures:

- Construction equipment shall be properly maintained at an offsite location; maintenance shall include proper tuning and timing of engines. Equipment

maintenance records and data sheets of equipment design specifications shall be kept onsite during construction.

- Onsite construction equipment shall not idle for more than 5 minutes in any one hour or be shut down when not in use.
- During the building phase, onsite electrical hook ups shall be provided for electric construction tools including saws, drills and compressors, to eliminate the need for diesel powered electric generators.
- Construction workers shall be encouraged to carpool to and from the construction site. Workers shall be advised at a pre-construction meeting about carpooling opportunities.

MM AIR-1b During the architectural coating phase, paints with a volatile organic compound content less than 10 grams per liter shall be used.

MM AIR-1c Prior to issuance of building permits, the project applicant shall demonstrate compliance with all applicable requirements of San Joaquin Valley Air Pollution Control District, Rule 9510 via the submittal of a Rule 9510 Implementation Plan to the City of Manteca for review and approval. The implementation plan shall achieve a 33-percent reduction in NO_x and a 45-percent reduction in PM_{10} over the first 10 years of operations through the use of onsite emissions reduction measures or through the payment of offsite mitigation fees to the SJVAPCD for purchase of emission reductions. The requirements of the approved implementation plan shall be incorporated into the proposed project.

MM AIR-1d Prior to approval of the final map, the City of Manteca shall verify that the project complies San Joaquin Valley Air Pollution Control District Rule 4901, which limits emissions from wood burning heaters, fireplaces, and outdoor wood burning devices. Compliance shall be verified by confirming that project's wood stoves or fireplaces do not exceed one of the following combinations of units:

- 100 wood stoves and 500 fireplaces; or
- Zero (0) wood stoves and 600 fireplaces; or
- 280 wood stoves and zero (0) fireplaces; or
- 210 wood stoves and 210 fireplaces.

MM AIR-1e Prior to issuance of building permits for each dwelling unit, the project applicant shall demonstrate that each habitable structure can exceed the latest edition of the Title 24 energy efficiency standards by a minimum of 10 percent.

Level of Significance After Mitigation

Significant unavoidable impact.

Carbon Monoxide Hot Spots

Impact AIR-2: Project emissions of carbon monoxide would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Thresholds of Significance

Carbon monoxide (CO) hot spot thresholds ensure that emissions of CO associated with traffic impacts from a project in combination with CO emissions from existing and forecasted regional traffic do not exceed state or national ambient air quality standards for CO at any traffic intersection impacted by the project. Project concentrations may be considered significant if a CO hot spot intersection analysis determines that project generated CO concentrations cause a localized violation of the state CO 1-hour standard of 20 ppm, state CO 8-hour standard of 9 ppm, national CO 1-hour standard of 35 ppm, or national CO 8-hour standard of 9 ppm.

Impact Analysis

Although the basin has demonstrated success in achieving CO standards, the SJVAPCD's GAMAQI states that localized CO concentrations still warrant concern and should be assessed to maintain ambient air quality standards and safeguard against localized high concentrations of CO that may expose sensitive receptors but not be recorded at monitoring sites. High levels of CO are associated with traffic congestion, idling, or slow-moving vehicles. CO transport is limited as it disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations close to a congested roadway or intersection may reach unhealthful levels, affecting sensitive receptors.

Annual emissions of CO during construction and operation were estimated by URBEMIS (see Impact AIR-1 for details regarding the assumptions) and are presented in Table 3.3-10. The main source of CO during construction is from the employee motor vehicles; the emissions are spread out over many miles. The main source of CO during operation is from motor vehicles, which are also spread out over many miles but tend to be highest at intersections near the project site.

Table 3.3-10: Carbon Monoxide Emissions

Phase	Source	Carbon Monoxide Emissions (tons per year)	
		Unmitigated	Mitigated
Construction	All phases	73.4	70.0
Operation	Natural gas	0.9	0.8
	Hearth	42.3	27.3
	Landscape	5.0	5.0
	Motor vehicles	291.1	286.7

Notes:
Mitigated motor vehicle emissions take into account project design features and mitigation measures, which would reduce emissions by approximately 1.5%. The emissions are generated by the URBEMIS model, with the exception of hearth (fireplace/wood stove).
Source: Michael Brandman Associates, 2010.

To estimate CO concentrations at impacted intersections, the fourth-generation California Line Source Roadway Dispersion Model (CALINE4) is used. This is as recommended by the Transportation Project-Level Carbon Monoxide Protocol. The model estimates CO concentrations based on peak-hour traffic volumes through the intersection. Therefore, the intersections with the greatest traffic volumes would have the greatest CO concentrations.

The SJVAPCD has established that if either of the criteria below can be associated with any intersection affected by the project, then the project needs to conduct a CO hotspot analysis to determine significance: (1) A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or (2) a traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at more or more intersections in the project vicinity.

Using the CALINE4 model, potential CO hot spots were analyzed at the intersections listed in Table 3.3-11. There are several inputs to the CALINE4 model. One input is the traffic volumes, which are from the figure, "Peak Hour Traffic Volumes and Lane Configurations – Cumulative plus Project Conditions," from the project-specific traffic report. The emission factors were generated using the EMFAC2007 model for the year 2013.

As shown in Table 3.3-10, the estimated 1-hour and 8-hour average CO concentrations at buildout in combination with background concentrations are below the state and national ambient air quality standards. No CO hot spots are anticipated because of traffic-generated emissions by the project in combination with other anticipated development in the area. Therefore, the mobile emissions of CO from the project are not anticipated to contribute substantially to an existing or projected air quality violation of CO.

Table 3.3-11: Localized Carbon Monoxide Concentrations

Intersection	Peak Hour	Estimated CO Concentration (ppm)		Significant Impact?
		1-Hour	8-Hour	
1. SR 120 WB Ramps/Yosemite Ave	PM	3.8	2.7	No
2. SR 120 EB Ramps/Yosemite Avenue	AM	4.3	3.0	No
6. Daniels Street/Airport Way	PM	5.2	3.6	No
7. SR 120 WB Ramps/Airport Way	PM	5.6	3.9	No
8. SR 120 EB Ramps/Airport Way	PM	5.5	3.9	No
9. Atherton Drive/Airport Way	PM	4.6	3.2	No

Notes:
SR = state route; EB = eastbound; WB = westbound
The numbers refer to the intersection number from the traffic study.
The 1 hour concentration is from the CALINE4 output (see Appendix C for model output) plus the 1 hour background concentration of 3.3 ppm (from Table 3.3-2).
The 8 hour project increment was calculated by multiplying the 1 hour CALINE4 output by 0.7 (persistence factor), then adding the 8 hour background concentration of 2.31 ppm (from Table 3.3-2).
A significant impact would occur if the estimated CO concentration is over the 1 hour state standard of 20 ppm or the 8 hour state/national standard of 9 ppm.
Source: Michael Brandman Associates, 2010.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Air Quality Attainment Plan Consistency

Impact AIR-3:	**The project may conflict with or obstruct implementation of the applicable air quality attainment plan.**

Impact Analysis

Because of the region's nonattainment status for ozone, $PM_{2.5}$, and PM_{10}, if project-generated emissions of either of the ozone precursor pollutants (ROG and NO_x), PM_{10}, or $PM_{2.5}$ would exceed the SJVAPCD's significance thresholds, then the project would be considered to conflict with the attainment plans. In addition, if the project would result in a change in land use and corresponding increases in vehicle miles traveled, they may result in an increase in vehicle miles traveled that is unaccounted for in regional emissions inventories contained in regional air quality control plans.

As discussed in Impact AIR-1, predicted operational emissions would exceed the SJVAPCD significance thresholds for ROG, NO_x, PM_{10}, and $PM_{2.5}$. In addition, construction emissions would exceed the significance thresholds for ROG and NO_x without mitigation. As a result, the project may conflict with emissions inventories contained in regional air quality attainment plans and result in a significant contribution to the region's air quality nonattainment status.

The SJVAPCD adopted the 2003 PM_{10} Plan on June 19, 2003 and first amended it on December 15, 2003 to comply with federal Clean Air Act requirements. The EPA approved the amended 2003 PM_{10} Plan effective June 25, 2004. The Air Basin is currently in attainment of the national standards for PM_{10}.

The SJVAPCD Governing Board adopted the 2008 $PM_{2.5}$ Plan following a public hearing on April 30, 2008. This plan will assure that the Valley will attain all the $PM_{2.5}$ standards—the 1997 federal standards, the 2006 federal standards, and the state standard—as soon as possible. The CARB submitted the 2008 $PM_{2.5}$ Plan to the EPA June 30, 2008. The 2008 $PM_{2.5}$ Plan builds upon the comprehensive strategy adopted in the 2007 Ozone Plan to bring the Valley into attainment of the 1997 national standards for $PM_{2.5}$. The EPA has identified NO_x and sulfur dioxide as precursors that must be addressed in air quality plans for the 1997 $PM_{2.5}$ standards. The 2008 $PM_{2.5}$ Plan is a continuation of the SJVAPCD's strategy to improve the air quality in the San Joaquin Valley.

As an extreme nonattainment area for the 1-hour ozone national standard, the SJVAPCD adopted the Extreme Ozone Attainment Demonstration Plan in 2004. On March 8, 2010, the EPA approved the

Plan for 1-hour ozone. Although effective June 15, 2005, the EPA revoked the 1-hour standard, the control requirements remain in effect to ensure progress toward meeting the new more stringent 8-hour ozone standard that has replaced the 1-hour standard. The Plan contains commitments to reduce a precursor of ozone, NO_x, including NO_x reductions from indirect sources.

The 2007 Ozone Plan contains measures to reduce ozone and particulate matter precursor emissions to bring the Air Basin into attainment with the federal 8-hour ozone standard. The 2007 Ozone Plan calls for a 75-percent reduction of NO_x and 25-percent reduction of ROG. The SJVAPCD Governing Board adopted the 2007 Ozone Plan on April 30, 2007. The plan, with innovative measures and a "dual path" strategy, assures expeditious attainment of the federal 8-hour ozone standard for all Air Basin residents. The CARB approved the plan on June 14, 2007.

In December 2005, the SJVAPCD adopted the ISR and the accompanying administrative fee rule (Rule 3180). The ISR requires certain development projects within the San Joaquin Valley Air Basin to reduce emissions by specified amounts either through onsite measures or through the payment of air quality impact fees to the SJVAPCD to obtain emission reductions offsite. The emission reduction requirements are designed to reduce PM_{10} and NO_x by amounts needed to meet the commitments of the 2003 PM_{10} Plan necessary to achieve attainment on schedule. Emission reduction projects envisioned by the ISR include retrofitting heavy-duty engines, replacing agricultural machinery and pumps, paving unpaved roads and road shoulders, trading out combustion-based lawn and agricultural equipment for electrical and other equipment, and a host of other projects that result in quantifiable emission reductions of PM_{10} and NO_x. Compliance with Rule 9510 is incorporated into Mitigation Measure AIR-1c.

Compliance with the ISR, however, does not achieve full and complete mitigation of a project's air quality impacts on nonattainment pollutants. This is because the rule requires projects to reduce their construction emissions by 20 percent for NO_x and 45 percent for PM_{10} and operational emissions by 33 percent for NO_x and 50 percent for PM_{10}.

Although the project would comply with applicable rules and regulations, the emissions generated by the uses are substantial. Therefore, the residual significance of this impact is significant and unavoidable.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures AIR-1a, AIR-1b, AIR-1c, AIR-1d, AIR-1e, TRANS-6a, and TRANS-6b.

Level of Significance After Mitigation

Significant unavoidable impact.

Cumulative Impacts

Impact AIR-4:	**The project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).**

Impact Analysis

The Air Basin is in nonattainment for ozone and particulate matter (PM_{10}, and $PM_{2.5}$), which are discussed below.

Ozone

As discussed in Impact AIR-1, project emissions would exceed the significance thresholds for ROG and NO_x. Therefore, project emissions could cumulatively combine with other sources in the Air Basin and could cause a future violation of the ozone standards. This is a potentially significant impact. As such, there could be health effects from ozone from exposure to the cumulative background concentration of ozone. Health impacts may or may not include the following: (a) pulmonary function decrements and localized lung edema in humans and animals, (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals, (c) increased mortality risk, (d) and/or altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans.

Particulate Matter

As discussed in Impact AIR-1, emissions during operation would exceed the PM_{10} and $PM_{2.5}$ significance thresholds, primarily due to paved road dust from project related motor vehicles. Much of the road dust would settle out near the road. However, some of it could extend up into the air, cumulatively combine with other sources, and cause a cumulative violation of the PM_{10} or $PM_{2.5}$ ambient air quality standards. This is a potentially cumulatively significant impact. As such, there could be cumulative exposure from the pollutants. Health effects from PM_{10} and $PM_{2.5}$ may include the following: (a) exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease, (b) declines in pulmonary function growth in children, and/or (c) increased risk of premature death from heart or lung diseases in the elderly. Daily fluctuations in $PM_{2.5}$ levels have been related to hospital admissions for acute respiratory conditions, school absences, and increased medication use in children and adults with asthma.

Air Quality Plan

Section 15130(b) of the CEQA Guidelines states the following:

> The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental

document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. This analysis considers the current CEQA Guidelines, which includes the recent amendments approved by the Natural Resources Agency and effective on March 18, 2010. Under the amended CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The air quality attainment plans describe and evaluate the future projected emissions sources in the Air Basin and set forth a strategy to meet both state and federal Clear Air Act planning requirements and federal ambient air quality standards. Therefore, the plans are relevant plans for a CEQA cumulative impacts analysis. As discussed in Impact AIR-3, the project is not consistent with the air quality attainment plans. Therefore, this is a potentially significant impact.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures AIR-1a, AIR-1b, AIR-1c, AIR-1d, AIR-1e, TRANS-6a, TRANS-6b, and TRANS-6c.

Level of Significance After Mitigation

Significant unavoidable impact.

Sensitive Receptors

Impact AIR-5:	**The project would not expose sensitive receptors to substantial pollutant concentrations.**

Impact Analysis

The three air quality issues of concern as they relate to sensitive receptors are toxic air contaminants, pesticide exposure, valley fever, indoor air pollution, and naturally occurring asbestos. Each issue is discussed separately.

Toxic Air Contaminants: Construction

Health-related risks associated with diesel exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. The estimation of cancer risk associated with exposure to toxic air contaminants is typically calculated based on a 70-year period of exposure. The use of diesel-powered construction equipment for the project, however, would be temporary (approximately 1 year in duration) and episodic and would occur over a relatively large area. For this reason, diesel exhaust generated by construction, in and of itself, would not be expected to create conditions where the probability of contracting cancer over a 70-year lifetime of exposure is greater

than 10 in 1 million for nearby receptors, the health risk significance threshold contained in the GAMAQI.

Toxic Air Contaminants: Operation

The project would place sensitive receptors on the project site. Therefore, an assessment of the surrounding uses is important in determining whether the project would expose sensitive receptors to toxic air contaminants or other pollutants.

Any project with the potential to expose sensitive receptors or the general public to substantial levels of toxic air contaminants would have a potentially significant impact. A health risk is the probability that exposure to a given toxic air contaminant under a given set of conditions will result in an adverse health effect. The health risk is affected by several factors, such as the amount, toxicity, and concentration of the contaminant; meteorological conditions; distance from the emission sources to people; the distance between emission sources; the age, health, and lifestyle of the people living or working at a location; and the length of exposure to the toxic air contaminant.

The CARB Air Quality and Land Use Handbook contains recommendations to help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution, including recommendations for distances between sensitive receptors and certain land uses. As shown below, the project does not conflict with the CARB's recommendations.

- Heavily traveled roads. Motor vehicles and trucks emit criteria pollutants (ROG, NO_x, CO, PM_{10}, and $PM_{2.5}$). Gasoline fueled vehicles emit benzene, which is a carcinogen. Diesel-fueled vehicles and trucks emit diesel particulate matter, which is also a carcinogen. CARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Epidemiological studies indicate that the distance from the roadway and truck traffic densities were key factors in the correlation of health effects, particularly in children. Roads assessed in the traffic study do not exceed a volume of 50,000 vehicles per day. Likewise, onsite roadways are not projected to exceed a volume of 50,000 vehicles per day. The distance from the project to State Route 120 (SR-120) and Interstate 5 (I-5) is 5,000 feet and 6,000 feet, respectively.
- Distribution centers. CARB also recommends avoiding siting new sensitive land uses within 1,000 feet of a distribution center. The closest existing distribution center is located more than 6,000 feet north of the project.
- Fueling stations. CARB recommends avoiding new sensitive land uses within 300 feet of a large fueling station (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. The nearest fueling station is Mossdale Arco, which is located approximately 6,000 feet west of the project site.
- Dry cleaning operations. CARB recommends avoiding siting new sensitive land uses within 300 feet of any dry cleaning operation that uses perchloroethylene. For operations with two or

more machines, CARB recommends a buffer of 500 feet. For operations with three or more machines, CARB recommends consultation with the local air district. The nearest dry cleaning operation is more than 14,000 feet from the project.

To the west of the project site are the Islander Mobile Home Park, Weatherbee Lake, and several single-family dwelling units. North of the project site is the Oakwood Shores single-family residential development. The primary source of air pollutants from residential development is from motor vehicles. As identified above, the project is consistent with CARB recommendations regarding heavily traveled roads. Therefore, the impact from surrounding motor vehicles is less than significant.

Associated with the Oakwood Shores development is a water tank (and associated plumbing works) and a pump station. Typically, these facilities have emergency backup diesel generators. The emissions associated with those sites are minimal and less than significant.

Agricultural uses are located to the north, east, and south of the project site. Agricultural activities typically use diesel powered off-road equipment, which emit ROG, NO_x, CO, PM_{10}, $PM_{2.5}$, and diesel particulate matter. Agricultural activities and travel on dirt roads can generate fugitive dust (PM_{10} and $PM_{2.5}$). Because these properties are actively farmed and the use of off-road equipment is minimal (thereby reducing dust and tailpipe emissions), these land uses are not considered significant sources of pollution.

The Union Pacific Railroad Oakland Subdivision is located approximately 0.5 mile northwest of the project site. The rail line connects the San Francisco Bay Area with Sacramento via the Altamont Pass. In the Manteca area, the rail line enters from the southwest near the I-5/SR-120 interchange and turns northward towards Stockton. The locomotives that use the Oakland Subdivision are powered by diesel engines; diesel particulate matter is a carcinogen. However, this segment of the Oakland Subdivision is single-track mainline; therefore, trains are typically traveling between 20 to 50 miles per hour on this stretch of track. As such, diesel particulate matter emitted by passing trains dissipates quickly. Therefore, considering the distance from the project site to the rail line and the rail activity in that location, this potential impact is less than significant.

The project may install wood burning fireplaces or wood stoves. Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic matter burn. A major health threat from smoke comes from fine particles. These microscopic particles can get into eyes and the respiratory system, where they can cause health problems such as burning eyes, runny nose, and illnesses such as bronchitis. Particle exposure can lead to a variety of health effects. For example, numerous studies link particle levels to increased hospital admissions and emergency room visits—and even to death from heart or lung diseases. Both long- and short-term particle exposures have been linked to health problems. Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as

reduced lung function and the development of chronic bronchitis—and even premature death. Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and acute bronchitis, and may also increase susceptibility to respiratory infections. Therefore, mitigation is required to reduce the impact of wood smoke in the project area. This is a potentially significant impact before mitigation. Mitigation Measure AIR-1e reduces the number of wood burning fireplaces and wood stoves and also reduces the impact of $PM_{2.5}$. Therefore, with mitigation this impact is less than significant.

Valley Fever

Valley Fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis*. The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and include dust storms, grading, and recreational off-road activities.

By geographic region, hospitalizations for Valley Fever in the San Joaquin Valley increased from 230 (6.9 per 100,000 population) in 2000 to 701 (17.7 per 100,000 population) in 2007. Within the region, Kern County reported the highest hospitalization rates, increasing from 121 (18.2 per 100,000 population) in 2000 to 285 (34.9 per 100,000 population) in 2007, and peaking in 2005 at 353 hospitalizations (45.8 per 100,000 population). The Centers for Disease Control and Prevention indicates that 752 of the 8,657 persons (8.7 percent) hospitalized in California between 2000 and 2007 for Valley Fever died.

Construction activities are anticipated to generate fugitive dust. The project will minimize the generation of fugitive dust during construction activities by complying with the SJVAPCD's Regulation VIII. As discussed in Impact AIR-1, compliance with the SJVAPCD's Regulation VIII will reduce potential impacts to air quality from fugitive dust generated during construction to less than significant.

During operations, dust emissions are anticipated to be negligible, because most of the project area would be occupied by buildings, pavement, and landscaped areas. This condition would preclude the possibility of the project from generating fugitive dust that may contribute to Valley Fever exposure. Impacts would be less than significant.

Indoor Air Pollution

Indoor air quality problems are caused primarily from indoor sources that release gases or particles into the air. Ventilation can decrease indoor pollutant levels by diluting the concentrations. The indoor air pollutants that may be associated with operation of the project include VOCs from new carpets and fresh paints, mold spores, radon, cigarette smoke, and combustion sources. The air pollutants that are controlled by the construction of the project include VOCs from carpets, paints, and radon.

VOCs from new carpets and new paint are temporary impacts that can be reduced by proper ventilation after installation. The health impact from these sources is anticipated to be less than significant.

Radon is a naturally occurring colorless, odorless, and tasteless radioactive gas originating from the radioactive decay of uranium in rock, soil, and groundwater. Radon gets inside a building primarily from soil under homes. It is a known human lung carcinogen and is the largest source of radiation exposure to the public. Most is rapidly exhaled; however, the inhaled decay products can deposit into the lung where they irradiate sensitive airway cells increasing the risk of lung cancer.

In general, the method and speed of radon's movement through soil is controlled by three conditions: the amount of water present in the pore space (the soil moisture content), the percentage of pore space in the soil (the porosity), and the permeability of the pore spaces that determines the soil's ability to transmit water and air. The distance that radon moves before most of it decays is less than 1 inch in water-saturated rocks or soils, but it can be more than 6 feet, and sometimes tens of feet, through dry rocks or soils. Even though the project area has no "real" source of uranium to produce radon gas, the permeability of the dry, gravelly soils permits high indoor radon to occur.

The California Department of Health Services publishes indoor radon levels by zip code. The latest results, dated May 2010, indicate the following number of tests exceed the EPA threshold of 4 pCi/l.

- 95330 (Lathrop): 0 of 2
- 95336 (North Manteca): 0 of 5
- 95337 (South Manteca): 1 of 5
- 95366 (Ripon): 0 of 7

Collectively, one of 19 samples (5 percent) taken in the four zip codes in the project vicinity contained radon concentrations in excess of the EPA threshold of 4 pCi/l. The California Department of Health Services defines areas with 0 to 6 percent of indoor radon tests exceeding 4 pCi/l to be of low potential for elevated exposure. Therefore, indoor radon exposure is not considered a significant health risk to project residents.

Naturally Occurring Asbestos

The Department of Conservation, Division of Mines and Geology published a guide entitled A General Location Guide For Ultramafic Rocks In California - Areas More Likely To Contain Naturally Occurring Asbestos, for generally identifying areas that are likely to contain naturally occurring asbestos. The guide includes a map of areas where formations containing naturally occurring asbestos in California are likely to occur. There are no such areas in San Joaquin County. For these reasons, development of the project is not anticipated to expose receptors to naturally occurring asbestos. Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure AIR-1e.

Level of Significance After Mitigation

Less than significant impact.

Objectionable Odors

Impact AIR-6: **The project would not create objectionable odors affecting a substantial number of people.**

Thresholds of Significance

If the proposed project were to result in a sensitive odor receptor being located in the vicinity of an undesirable odor generator, the impact would be considered significant. The SJVAPCD regulates odor sources through its nuisance rule, Rule 4102, but has no quantitative standards for odors. The SJVAPCD presents a list of project screening trigger levels for potential odor sources in its GAMAQI, which is displayed in Table 3.3-12. If the project were to result in sensitive receptors being located closer to an odor generator in the list in Table 3.3-12 than the recommended distances, a more detailed analysis including a review of SJVAPCD odor complaint records is recommended.

Table 3.3-12: Screening Levels for Potential Odor Sources

Odor Generator	Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Compositing Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g., auto body shop)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile
Wastewater Treatment Facilities	2 miles
Source: San Joaquin Valley Air Pollution Control District, 2002.	

Impact Analysis

The project would allow the development of residential uses, which are not considered sources of objectionable odors. During construction, onsite, diesel-powered equipment and vehicles will emit diesel particulate matter, which is odorous to some. Also during construction, there would be short-term emissions of ROGs during painting and asphalt paving. These odors will dissipate with distance and should not reach an objectionable level at nearby residences. Impacts would be less than significant.

Regarding surrounding odors, there are no major odor generating sources within 1 mile of the project site. There are no wastewater treatment plants or refineries within 2 miles of the project site. Therefore, surrounding uses would not cause substantial odor impacts to the residents in the project.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Greenhouse Gas Emissions

Impact AIR-7:	**The project would generate greenhouse gas emissions that would have a significant impact on the environment and would conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.**

Thresholds of Significance

In accordance with the SJVAPCD's Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA (San Joaquin Valley Air Pollution Control District, 2009), a project would be considered to have a less than significant impact on climate change if it were to do at least one of the following:

- It was exempt from the requirements of CEQA, or
- [It complied] with an approved greenhouse gas emission reduction plan or greenhouse gas mitigation program which avoids or substantially reduces greenhouse gas emissions within the geographic area in which the project is located. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency, or
- [It implemented] approved best performance standards, or
- [It quantified] project greenhouse gas emissions and reduce those emissions by at least 29 percent compared to business as usual.

"Business as usual" is referenced in CARB's AB 32 Scoping Plan as emissions occurring in 2020 if the average baseline emissions during the 2002–2004 period grew to 2020 levels, without control. Therefore, 2002–2004 emissions factors, on a unit of activity basis, multiplied by the activity expected to occur in 2020, is an appropriate representation of 2020 business as usual. The reductions can be based on any combination of reduction measures, including greenhouse gas reductions achieved as a result of changes in building and appliance standards occurring since the 2002–2004 baseline period.

Project Analysis

There are no approved greenhouse gas emission reduction plans or programs applicable to the project. In addition, the SJVAPCD has not yet provided best performance standards for this type of project. Therefore, the project uses would need to reduce greenhouse gas emissions by 29 percent compared with business as usual. This reduction can be taken through design features, mitigation measures in other impact areas, greenhouse gas mitigation measures, and future regulations.

This analysis is restricted to greenhouse gases identified by AB 32, which include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The project would generate a variety of greenhouse gases during construction and operation, including several defined by AB 32 such as carbon dioxide, methane, and nitrous oxide. The project would not emit perfluorocarbons. The project would not directly emit sulfur hexafluoride; however, within the transmission of electricity, small amounts of sulfur hexafluoride are emitted, which is an indirect emission.

The project may also emit greenhouse gases that are not defined by AB 32. For example, the project may generate aerosols from diesel-powered equipment and vehicles. Aerosols are short-lived particles, as they remain in the atmosphere for about 1 week. Black carbon is a component of aerosol. Studies have indicated that black carbon has a high global warming potential; however, the Intergovernmental Panel on Climate Change states that it has a low level of scientific certainty. Water vapor could be emitted from evaporated water used for landscaping, but this is not a significant impact because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks rather than emissions from project-related activities. The project would emit nitrogen oxides and volatile organic compounds, which are ozone precursors. Ozone is a greenhouse gas; however, unlike the other greenhouse gases, ozone in the troposphere is relatively short-lived and can be reduced in the troposphere on a daily basis. Stratospheric ozone can be reduced through reactions with other pollutants.

An upstream emission source (also known as life cycle emissions) refers to emissions that were generated during the manufacture of products to be used for construction of the project. Upstream emission sources for the project include but are not limited to the following: emissions from the manufacture of cement, emissions from the manufacture of steel, and/or emissions from the transportation of building materials to the seller (i.e., URBEMIS only estimates the transportation of

building materials locally). The upstream emissions were not estimated because they are not within the control of the project and to do so would be speculative at this time. Additionally, the California Air Pollution Control Officers Association White Paper on CEQA and Climate Change supports this conclusion by stating, "The full life-cycle of GHG [greenhouse gas] emissions from construction activities is not accounted for . . . and the information needed to characterize [life-cycle emissions] would be speculative at the CEQA analysis level." Therefore, pursuant to CEQA Guidelines Sections 15144 and 15145, upstream /life cycle emissions are speculative and no further discussion is necessary.

An inventory of greenhouse gas emissions generated by the project is presented below. The emissions are converted to metric tons of carbon equivalents ($MTCO_2e$) using the formula:

$$MTCO_2e = (\text{tons of gas}) \times (\text{global warming potential}) \times (0.9072 \text{ metric ton of gas})$$

Construction Emissions Inventory

During construction activities, greenhouse gases would be emitted from construction equipment, vehicle, and truck exhaust. Carbon dioxide emissions were estimated using URBEMIS 2007 as described in Impact AIR-1. URBEMIS does not estimate methane or nitrous oxide emissions; therefore, those emissions associated with construction emissions from off-road equipment were determined by scaling the construction carbon dioxide emissions estimated by URBEMIS by the ratio of emissions expected per gallon of diesel fuel. There are 10.15 kilograms of carbon dioxide, 0.58 gram of methane, and 0.26 gram of nitrous oxide per gallon of diesel fuel used, according to the California Climate Action Registry's General Reporting Protocol. Therefore, the ratios of methane and nitrous oxide to carbon dioxide per gallon of diesel fuel are 0.00006 and 0.00003, respectively. Carbon dioxide emissions from off-road diesel sources were multiplied by these ratios to estimate methane and nitrous oxide emissions from construction equipment. These emissions were then converted to $MTCO_2e$ using the global warming potential of each gas.

To estimate methane, nitrous oxide, and hydrofluorocarbon (from refrigerants) emissions from vendor trips and employee vehicles, 5 percent was added to the carbon dioxide emissions, pursuant to an Environmental Protection Agency 2005 publication. Installation of refrigerators and air conditioning units may result in a small amount of leakage of hydrofluorocarbons.

Construction emissions are presented in Table 3.3-13. Worker trips are the greatest contributor of carbon dioxide, contributing 58 percent of the emissions. This is partly because of the setting in URBEMIS for a "rural" project; construction workers may have to travel far to arrive at the project site. Mitigation Measure AIR-1a may help to reduce those emissions. To put the emissions into perspective, the CARB mandatory greenhouse gas reporting applies to select large facilities emitting more than 25,000 metric tons of carbon dioxide per year. The SJVAPCD does not have thresholds or guidance regarding the significance of construction-related emissions. However, that does not mean a significance finding should not be identified. AB 32 requires that emissions within the State are

reduced to 1990 levels by the year 2020. There would not be any greenhouse gas emissions emitted in the year 2020. Construction emissions are minimal and, therefore, are anticipated to be less than significant.

Table 3.3-13: Construction Greenhouse Gas Emissions

Source	Emissions (tons per year)				Emissions ($MTCO_2e$)
	Carbon Dioxide	Methane	Nitrous Oxide	HFCs	
Demolition	22	0.001	0.001	0.00	22
Grading	114	0.007	0.003	0.00	115
Paving	43	0.003	0.001	0.00	43
Building: Off road diesel	2,556	0.153	0.077	0.00	2,581
Building: Vendor trips	744	*	*	*	709
Building: Worker trips	7,243	*	*	*	6,899
Coating	67	0.004	0.002	0.00	68
Installation - refrigerators	0	0.000	0.000	0.01	15
Installation - A/C	0	0.000	0.000	0.08	113
Waste	**	**	**	**	1,382
Total	10,789	0.168	0.084	0.09	11,947

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalent, converted from tons by multiplying by 0.9072 and the global warming potential (carbon dioxide = 1, methane = 21, nitrous oxide = 310, hydrofluorocarbons [HFC] for refrigerators = 2065, HFC for air conditioners [A/C] = 1513).
* 5 percent is added to on-road vehicle carbon dioxide emissions to account for methane, nitrous oxide, and hydrofluorocarbon emissions (from air conditioning leakage).
** Waste from construction was generated using the WARM model; emissions are only output in $MTCO_2e$. Note that mitigation in other impact areas may reduce the quantity of waste during construction; however, no reduction is taken because the quantity of that reduction is not specified within the mitigation measure.
Source: Michael Brandman Associates, 2010.

Operational Emissions Inventory

Greenhouse gas emissions from operation of the project are shown in Table 3.3-14. As shown, the largest source of emissions are from motor vehicles that would access the project site, contributing approximately 70 percent of the emissions. The emissions presented are "business as usual" emissions, which refer to emissions that do not account for reductions attributable to regulations that occurred after 2004, project design features, or mitigation measures. Note that minor emissions such as from landscaping are not included.

Table 3.3-14: Operational Business as Usual Greenhouse Gas Emissions

Source	Emissions ($MTCO_2e$ per year)
Motor vehicles	26,718
Natural gas	4,330
Hearth	1,289
Indirect electricity	3,352
Water transport	651
Waste	844
Refrigerants	1,138
Total	**38,322**

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents (includes carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, and/or hydrofluorocarbons).
Source: Michael Brandman Associates, 2010.

Motor vehicles: The carbon dioxide emissions were estimated using URBEMIS 2007 as discussed in Impact AIR-1. Methane emissions were estimated using EMFAC2007 emission factors as discussed in Appendix C. Nitrous oxide emissions were estimated using emission factors as described in Appendix C.

Natural Gas: Natural gas emissions refer to the emissions that occur when natural gas is burned on the project site. Natural gas may be used for heating water, space heating, dryers, kitchen stoves, or other uses. Natural gas would be supplied by the Pacific Gas & Electric company. Carbon dioxide, methane, and nitrous oxide emissions were estimated using the procedures outlined in Appendix C.

Indirect Electricity: Indirect electricity refers to the emissions generated by offsite power plants to supply the electricity required for the project. Electricity usage was obtained from the Public Services and Utilities section of the EIR and was converted to greenhouse gas emissions using emission factors presented in Appendix C.

Water Transport: There would be greenhouse gas emissions generated from the electricity required to transport and treat the water to be used on the project site. The water to be used by the project was obtained from the Public Services and Utilities section of this EIR. Refer to Appendix C for details.

Waste: There would be greenhouse gas emissions from the decomposing waste generated by the project. The waste generated was obtained from the Public Services and Utilities section of this EIR. The emissions were estimated by the EPA WARM model.

Refrigerants: During operation, there may be leakages of refrigerants (hydrofluorocarbons) from air conditioners and refrigerators. An average global warming potential of 2,065 for refrigerators and 1,513 for air conditioning is used.

Reductions: There are a variety of mitigation measures, project design features, and regulations that would reduce emissions from business as usual, as summarized in Table 3.3-15.

Table 3.3-15: Greenhouse Gas Emission Operational Reduction Analysis

Mitigation Measure, Regulation, or Project Design Feature	Reduction (%)	Reduction Comments and Calculations
Motor Vehicles		
Design Feature: The project would construct a 12-mile trail system within the project that would connect with the City facilities.	1.0	Pedestrian accommodations within project site for suburban/rural. Source: CAPCOA (SDT-1)
Design Feature: Community clubhouse within walking distance of the residential units.		
Mitigation Measure TRANS-6a: Appropriate transit facilities.		
Design Feature: Pedestrian facilities in the project vicinity include sidewalks along the frontage of developed properties on Woodward Avenue and Airport Way.		
Design Feature: A Class I (separated, off-street) bike path is located along Atherton Drive. A Class II (on-street with designated signing and striping) bike lane exists on portions of Airport Way from south of SR 120 to Woodward Avenue.	0.5	The combination of this measure would result in a 0.5% reduction, as the literature does not identify reductions. Source: CAPCOA (SDT-7 and LUT-8)
Design Feature: The Final Manteca Bikeway Master Plan (2003) shows a future bikeway system that would include Class II lanes along Airport Way and the Class I paths along the extension of Atherton Drive. Bike facilities are not shown on Woodward Avenue within the project vicinity.		
Mitigation Measure TRANS-6c: Enclosed bicycle storage for residential units.		
Design Feature: Residential density is approximately 7.3 dwelling units per acre (1650 dwelling units divided by [477 acres minus 75 acres for park and clubhouse minus 177 acres to be undeveloped])	0.0	VMT Reduction = (project dwelling units per acre) – 7.6 dwelling units per acre. Because the project density is 7.3, which is below the typical development, no reduction is allowed. Source: CAPCOA (LUT-1)
Design Feature: Distance to downtown Manteca is about 5 miles and Lathrop is about 4 miles. The California Employment Development Department indicates that combined employment for the two cities is 28,900.	0.1	VMT reduction = (12 – distance to downtown or job center) ÷ 12 x 0.20 = (12 – 5) ÷ 12 x 0.20 = 0.1

Table 3.3-15 (cont.): Greenhouse Gas Emission Operational Reduction Analysis

Mitigation Measure, Regulation, or Project Design Feature	Reduction (%)	Reduction Comments and Calculations
Design Feature: Design of development. The project is being developed on approximately 300 acres, or 0.47 square miles. According to the site plan, there are 16 four-way intersections. Therefore, there are 34 intersections per square mile.	0.0	VMT reduction = (Intersections per square mile of project – 36) ÷ 36 x 0.12 = (34 – 36) ÷ 36 x 0.12 = -0.007%. Because the result is negative, there could be an increase in VMT; no reduction is taken for this feature. Source: CAPCOA (LUT-9)
Design Feature: The site plan notes 5 traffic circles out of approximately 53 intersections, which is 9% of the intersections. Traffic circles are a traffic calming measure.	0.0	Because the percent of intersections with improvements is less than 25%, there is no reduction. Source: CAPCOA (SDT-2)
Regulation: Pavley (AB 1493)	14.0	A reduction of 3,855 $MTCO_2$ per year is estimated by the Bay Area Air Quality Management District's Greenhouse Gas Model (version 1.1.9 Beta), which is 14% of the project's operational motor vehicle emissions.
Regulation: Low Carbon Fuel Standard (Executive Order S-01-07)	6.0	A reduction of 1,705 $MTCO_2e$ per year is estimated by the Bay Area Air Quality Management District's Greenhouse Gas Model (version 1.1.9 Beta), which is 6% of the project's operational motor vehicle emissions.
Subtotal Motor Vehicle	*21.6*	
Waste		
Standard Operational Feature: The single-family residential uses would be served with curbside recycling collection service.	unknown	The provision of curbside recycling service provides opportunities for waste diversion; however, the reduction in waste from this service is unknown.
Mitigation Measure PSU-9b: Multi-family residential units have centralized recycling facilities.	unknown	The provision of centralized recycling facilities provides opportunities for waste diversion does not necessarily mean that the residents will actually recycle; however, it does encourage them to do so.
Offsets		
Design Feature: Dedication of open space (177 acres)	0.0	There is no reduction associated with preservation of land; only land that has been previously settled and converted to open space. Source: CAPCOA (V-2)
Mitigation Measure AES-2b: Landscaping design guidelines	0.0	No reduction is taken for this measure because the existing almond trees are going to be removed. Source: CAPCOA (V-1)

Table 3.3-15 (cont.): Greenhouse Gas Emission Operational Reduction Analysis

Mitigation Measure, Regulation, or Project Design Feature	Reduction (%)	Reduction Comments and Calculations
Electricity		
Mitigation Measure AES-2a: Design guidelines that would reduce energy use.	0.0	MM AIR-1e requires that energy efficiency be increased; the design guidelines may be included in that reduction.
Mitigation Measure AIR-1e: Increase energy efficiency beyond Title 24 by 10%.	1.5	Reduction = Reduction based on climate zone, building type, and energy type x reduction commitment = 0.15% x 10% = 1.5%. Note: The project is in climate zone 12 Source: CAPCOA (BE-1)
Regulation: Renewables Portfolio Standards.	15.3	Source: The California business as usual inventory is 139.2 million $MTCO_2e$ in 2020. The Scoping Plan projects a reduction of 21.3 million $MTCO_2e$, which corresponds to a 15.3% reduction.
Natural Gas		
Mitigation Measure AIR-1e: Increase energy efficiency beyond Title 24 by 10%.	8.0	Reduction = Reduction based on climate zone, building type, and energy type x reduction commitment = 0.8% x 10% = 8% (Note that the reduction was weighted based on ratio to single-family residential and multi-family residential) Source: CAPCOA (BE-1)
Water		
Mitigation Measure PSU-6b: Non-potable irrigation system using well water until recycled water is available.	20.0	Use of reclaimed water can be up to 40% effective in Northern California (CAPCOA WSW-1). Use of locally sourced water supply can reduce electricity from water transport up to 60% in Northern California (CAPCOA WSW-3); therefore, a conservative reduction is applied.
Mitigation Measure PSU-6c: Outdoor water conservation measures in communal landscaped areas.	unknown	No reduction because the measure is not adequately specific. Source: CAPCOA (WUW-3, WUW-4, WUW-6)
Hearth		
Mitigation Measure AIR-1d: Restrict wood burning stoves and fireplaces	15.7	Source: See Appendix C for calculations
Notes: The mitigation measures are summarized; for the language of each measure, please refer to the individual EIR section. Abbreviations: VMT = vehicle miles traveled; CAPCOA = California Air Pollution Control Officers Association's document, Quantifying Greenhouse Gas Mitigation Measures (2010) Source: Michael Brandman Associates, 2010.		

As shown in Table 3.3-16, total reductions are approximately 18.3 percent, which is not sufficient compared with the threshold of 29 percent. The project's greenhouse gas emissions would conflict with AB 32 and the Scoping Plan, which has the purpose to reduce greenhouse gas emissions to 1990 levels by the year 2020. This is a significant impact with incorporation of mitigation.

Table 3.3-16: Operational Greenhouse Gas Emissions (Year 2020, With Reductions)

Source	Reduction (%)	Emissions ($MTCO_2e$ in year 2020)		
		Unmitigated	Reduction	Mitigated
Motor vehicles	21.6	26,718	5,771	20,947
Natural gas	8.0	4,330	346	3,984
Hearth	15.7	1,289	202	1,087
Electricity	16.8	3,352	563	2,789
Water transport	20.0	651	130	521
Waste	0.0	844	0	844
Refrigerants	0.0	1,138	0	1,138
Total	**18.3**	**38,322**	**7,013**	**31,309**

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents, which includes carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, and sulfur hexafluoride.
Source: Unmitigated emissions are from Table 3.3-14. The reduction percentages are from Table 3.3-15.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures AES-2a, AES-2b, AIR-1d, AIR-1e, PSU-6b, PSU-6c, TRANS-6a, TRANS-6b, and TRANS-6c.

Level of Significance After Mitigation

Significant unavoidable impact.

Climate Change Adaptation

Impact AIR-8: **The project may be affected by climate change through a reduction in the quality and supply of water available within the State or increased flooding.**

Background

Although human understanding of the Earth's climate is increasing, it is accepted by the majority of climate change researchers that anthropogenic sources of greenhouse gases are influencing climate patterns. There are several negative potential environmental effects associated with climate change. Worldwide, average temperatures are estimated by some researchers to increase by 1.8 degrees centigrade (°C) to 4°C, or 3°F to 7°F, by the end of the 21st century. However, a global temperature

increase does not translate to a uniform increase in temperature in all locations on the earth. Regional climate changes are dependent on multiple variables, such as topography. One region of Earth may experience increased temperature, increased incidents of drought and similar warming effects, whereas another region may experience a relative cooling. According to the United Nations Intergovernmental Panel on Climate Change's Working Group II Report, climate change impacts to North America may include:

- Diminishing snowpack
- Increasing evaporation
- Exacerbation of shoreline erosion
- Sea level rise
- Increased risk and frequency of wildfire
- Increased risk of insect outbreaks
- Increased experiences of heat waves
- Rearrangement of ecosystems as species and ecosystems shift northward and to higher elevations

The California Climate Change Center published a report that assesses the risks of climate change to California. In addition, the California Natural Resources Agency published the 2009 California Climate Adaptation Strategy in December 2009 in response to the Governor's Executive Order S-13-2009. The document contains strategies for addressing impacts to public health, biodiversity and habitat, ocean and coastal resources, water management, agriculture, forestry, and transportation and energy infrastructure.

Water Supply

A vast network of man-made reservoirs and aqueducts captures and transports water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages.

One of the major impacts of climate change is a loss of natural snowpack, particularly the Sierra Nevada snowpack. Snowmelt provides an annual average of 15 million acre-feet of water, released between April and July each year, according to a paper by the Department of Water Resources. The California Department of Water Resources projects that the Sierra snowpack will experience a 25- to 40-percent reduction from its historic average by 2050. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack.

To conserve water, effective January 1, 2010, all development must meet the State Model Water Efficient Landscape Ordinance requirements that establish landscape design requirements for most new and rehabilitated landscape areas. Public landscapes and private development projects including

developer installed single-family and multi-family residential landscapes with at least 2,500 square feet of landscape area are subject to the Model Ordinance. Homeowner provided landscaping at single-family and multi-family homes are subject to the Model Ordinance if the landscape area is at least 5,000 square feet.

Sea Level Rise and Flooding

Climate change could result in sea level rises and increased flooding, as explained in the following excerpts from a paper published by the California Climate Change Center in 2006 and a paper prepared by Moser et al. in 2009.

Sea level rise is already affecting much of California's coastal region, including the Southern California coast, the Central California open coast, and the San Francisco Bay and upper estuary. During the past century, sea levels along California's coast have risen about 7 inches. The rate of sea level rise observed at the gauges along the California coast is similar to the estimate for global mean sea level. Sea levels are likely to increase by up to 35 inches by the year 2100, depending on the magnitude of climate warming. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

Although levees have been built to contain the 100-year flood, a 12-inch increase in sea levels (projected for the medium warming range of temperatures) would mean storm surge-induced flood events at the 100-year level would likely occur once every 10 years. Despite extensive engineering efforts, major floods have repeatedly breached levees that protect freshwater supplies and islands in the San Francisco Bay Delta as well as fragile marine estuaries and wetlands throughout the State. Continued sea level rise will further increase vulnerability to levee failures. Some of the most extreme flooding during the past few decades has occurred during El Niño winters, when warmer waters fuel more intense storms. During the winters of 1982–1983 and 1997–1998, for example, abnormally high seas and storm surges caused millions of dollars' worth of damage in the San Francisco Bay area. Highways were flooded as 6-foot waves crashed over waterfront bulkheads, and coastal real estate was destroyed. Climate change will require major changes in flood management. In many regions such as the Central Valley, where urbanization and limited river channel capacity already exacerbate rising flood risks, flood damage and flood control costs could amount to several billion dollars.

Research has shown that rapid greenhouse gas emission reductions cannot prevent substantial sea level rise because ocean waters store heat effectively and will expand for centuries, long after air temperatures have been stabilized. Therefore, adaptation is necessary to manage the threat of sea level rise to coastal areas.

Impact Analysis

Water Supply

As discussed in Impact PSU-6, the Water Supply Assessment concluded that the City of Manteca has a sufficient supply of groundwater and surface water to serve the project. Because the Water Supply Assessment's conclusions partially rely on the assumption of water conservation and reclaimed water use, Mitigation Measures PSU-6b and PSU-6c are proposed requiring that the proposed project implement appropriate and feasible measures to reduce potable water consumption. With the implementation of mitigation, impacts from climate change to the project would be less than significant.

Sea Level Rise

The project site is not located near the coastal area and is at sufficient elevation to not be impacted by rising sea levels.

Flooding

As discussed in Impact HYD-5, approximately 177 acres south of the levee lie within the 100-year flood zone. However, this portion of the project site will be left as open space and no habitable structures are proposed to be built on it. The portion of the project site north of the dry levee is within the limits protected from the 100-year flood by a provisionally accredited levee. The structural stability of the levee was evaluated in a Levee Seepage Report prepared by ENGEO (Appendix H). The report concluded that with the implementation of a subsurface drainage system between the levee and the residential uses, the levee would be able to withstand a high water stage event without failure. The subsurface drainage system is required by Mitigation Measure HYD-4.

It is also important to note that the recent and more stringent state floodplain legislation for the San Joaquin River region will result in stricter building standards in the near future. For example, urban areas that reside behind levees are required to have a 200-year level of flood protection by the year 2012 when the Central Valley Flood Protection Plan is adopted. According to the Department of Water Resources Best Available Map, the portion of the project site north of the levee is susceptible to a 200-year level flood.

Wildfires

As discussed in Section 7, Effects Found Not to be Significant, wildfires would not pose a hazard to the proposed project because the project site is not located in areas susceptible to such fires. Any increases in wildfires as a result of climate change would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures HYD-4, HYD-5a, HYD-5b, PSU-6b, and PSU-6c.

Level of Significance After Mitigation

Less than significant impact.

3.4 - Biological Resources

3.4.1 - Introduction

This section describes the current regulatory framework of federal, state, and local regulations applying to the City of Manteca and San Joaquin County that would apply to the project. This section also establishes the existing biological setting and potential effects from project implementation on the site and its surrounding area and how these impacts relate to the regulatory framework. The analysis in this section is based on biological record searches conducted by Michael Brandman Associates and the Delineation of Jurisdictional Waters and Wetlands prepared by Michael Brandman Associates. Both documents are provided in Appendix D.

3.4.2 - Environmental Setting

Existing Conditions

The 477-acre project site contains agricultural uses. A dry levee that runs from S. Woodward Avenue east to Airport Way bisects the property. Approximately 300 acres lie north of the levee and the remaining 177 acres lie south of the levee.

The area north of the levee contains row crops, an almond orchard, and several structures. The structures are located approximately 300 feet west of the eastern project boundary and consist of several dilapidated agricultural and residential buildings, including a barn, storage shed, mobile home, and related buildings. Unpaved roads connect the structures with E. Woodward Road and the nearby fields and orchards. Irrigation ditches lie along E. Woodward Road and S. Woodward Avenue and cross the property in several other locations.

The area south of the levee contains row crops, unpaved roads, and irrigation ditches. No structures are located in this area.

Adjacent Land Uses/Wildlife Corridors

West

S. Woodward Avenue, a two-lane undivided roadway, forms the western boundary of the project site. Land uses further to the west of S. Woodward Avenue include the Islander Mobile Home Park, Weatherbee Lake, and several single-family dwelling units.

North

The project site is bounded by E. Woodward Avenue, a two-lane undivided roadway, to the north. Land uses north of E. Woodward Avenue include the Oakwood Shores single-family residential development (which occupies the former Manteca Waterslides site) and agricultural uses consisting of row crops.

East

Agricultural uses consisting of row crops are located to the east of the project site.

South

Walthall Slough, a tributary to the San Joaquin River, forms the southeastern boundary of the project site. Land uses further south include agricultural uses consisting of row crops.

Plant Communities

Table 3.4-1 depicts the plant communities present on the project site. Each community is described in further detail below.

Agricultural/Upland Resources

The majority of the study area contains no natural plant communities. The area is primarily an actively cultivated field used for row crops, although there are almond orchards present in the northwest of the project area. There are also a few rural residences at the eastern edge of the study area along Airport Way with associated irrigated pastures of a few acres or less.

Plant species observed within the study area include almond (*Prunus dulcis*), wild oat (*Avena barbata*), rip-gut brome (*Bromus diandrus*), alfalfa (*Medicago sativa*), Russian thistle (*Salsola tragus*), rough pigweed (*Amaranthus retroflexus*), sunflower (*Helianthus annuus*), tarragon (*Artemisia dracunculus*), coyote brush (*Baccharis pilularis*), telegraphweed (*Heterotheca grandiflora*), prickly lettuce (*Lactuca serriola*), milk thistle (*Silybum marianum*), sow thistle (*Sonchus asper*), barley (*Hordeum* sp.), and heliotrope (*Heliotropium curassavicum*).

Aquatic Resources

The project area has been used extensively for agricultural purposes and does not contain any evidence of vernal pool habitat or wetlands adjacent (extending outside the ordinary high water mark (OHWM) of any stream (irrigation ditch). There are irrigation ditches within the project area that support a mix of upland (facultative upland, upland) and hydrophytic (facultative, facultative wet, or obligate) vegetation within the OHWM. Exhibit 3.4-2 and Exhibit 3.4-3 depict aquatic resources within the project site.

Vegetation found within the irrigation ditches include echinochloa (*Croton setigerus*), watercress (*Rorippa nasturtius-occidentalis*), prickly lettuce (*Lactuca serriola*), curly dock (*Rumex crispus*), cocklebur (*Xanthium strumarium*), yellow sweet clover (*Melilotus officinalis*), and field mustard (*Brassica rapa*).

Wildlife

Field surveys provided evidence suggesting the project area supports populations of aquatic and terrestrial vertebrates, including small mammals and avian species. These are listed below.

Walthall Slough

Project Site

Plant Communities *(acres in project)*

- Agricultural (Alfalfa) *(130.06 acres)*
- Agricultural (Almond) *(88.57 acres)*
- Agricultural (Corn) *(129.13 acres)*
- Agricultural (Squash) *(57.65 acres)*
- Riparian *(0.29 acre)*
- Ruderal *(0.58 acre)*
- Valley Oak Riparian *(2.29 acres)*
- Elm *(0.05 acre)*
- Walnut *(0.08 acre)*
- Willow *(1.26 acres)*
- Drainage *(6.81 acres)*
- Disturbed *(63.14 acres)*
- Developed *(4.89 acres)*
- **Total *(484.80 acres)***

Source: NAIP for San Joaquin County (2009); ESRI (2008); MBA (2010).

NORTH

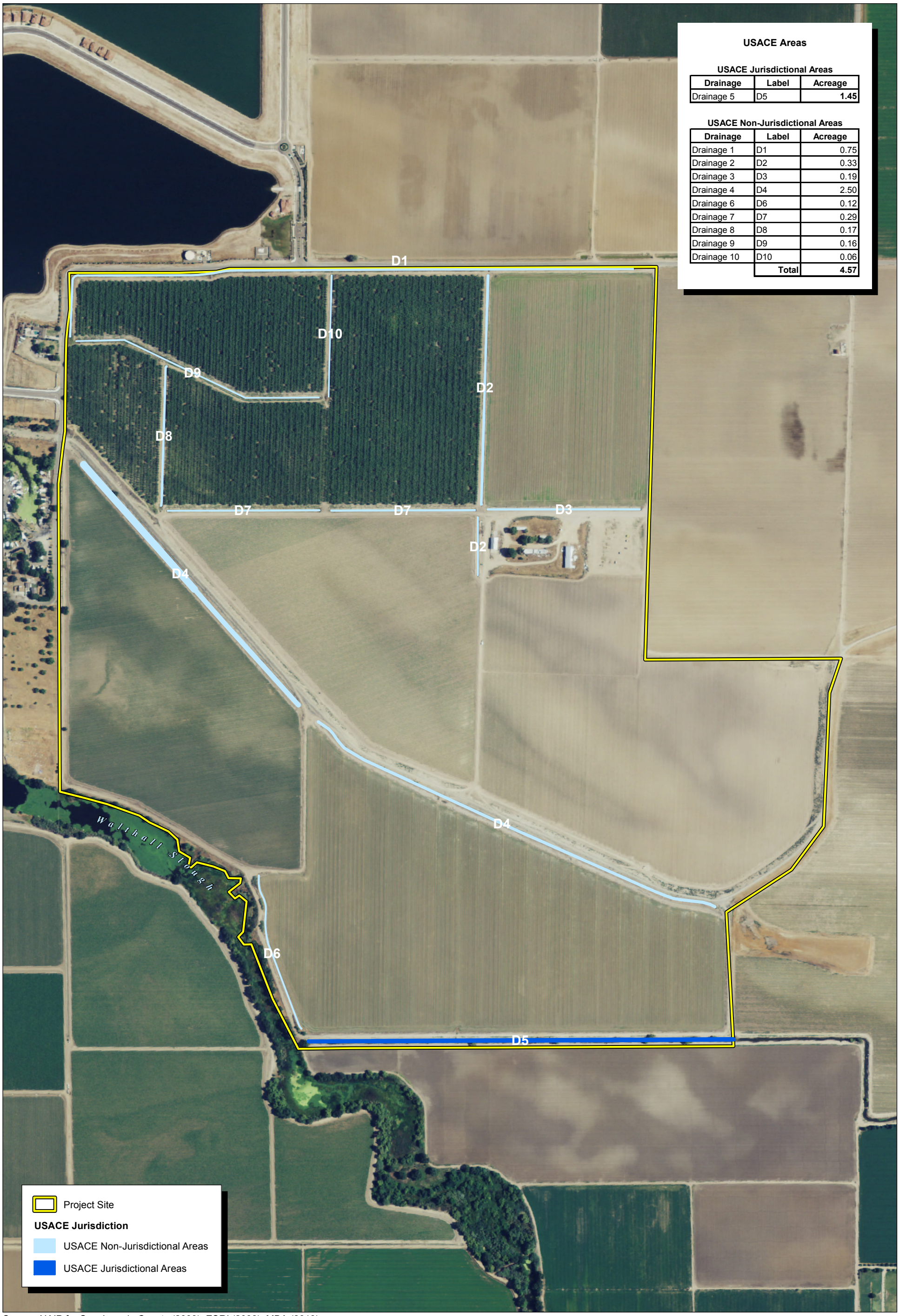
600 300 0 600

Feet

Michael Brandman Associates

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Exhibit 3.4-1
Plant Communities Map



USACE Areas

USACE Jurisdictional Areas

Drainage	Label	Acreage
Drainage 5	D5	**1.45**

USACE Non-Jurisdictional Areas

Drainage	Label	Acreage
Drainage 1	D1	0.75
Drainage 2	D2	0.33
Drainage 3	D3	0.19
Drainage 4	D4	2.50
Drainage 6	D6	0.12
Drainage 7	D7	0.29
Drainage 8	D8	0.17
Drainage 9	D9	0.16
Drainage 10	D10	0.06
	Total	**4.57**

Source: NAIP for San Joaquin County (2009); ESRI (2008); MBA (2010).

NORTH

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Michael Brandman Associates

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Exhibit 3.4-2
USACE Jurisdictional Areas

CDFG Jurisdictional Areas

Drainage	Label	Acreage
Drainage 1	D1	1.56
Drainage 2	D2	0.82
Drainage 3	D3	0.43
Drainage 4	D4	3.51
Drainage 5	D5	2.32
Drainage 6	D6	0.20
Drainage 7	D7	0.90
Drainage 8	D8	0.44
Drainage 9	D9	0.75
Drainage 10	D10	0.38
	Total	**11.30**



Source: NAIP for San Joaquin County (2009); ESRI (2008); MBA (2010).

Michael Brandman Associates

NORTH

600 300 0 600

Feet

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Exhibit 3.4-3
CDFG Jurisdictional Areas

Fish Species

- Mosquito fish (*Gambusia affinis*)

Amphibian Species

- Western toad (*Bufo boreas*)

Reptile Species

- Western fence lizard (*Sceloporus occidentalis*)

Mammalian Species

- California ground squirrel (*Spermophilus beecheyi*)
- California vole (*Microtus californicus*)
- Botta's pocket gopher (*Thomomys bottae*)
- Racoon (*Procyon lotor*)

Avian Species

- American crow (*Corvus brachyrhnchos*)
- American kestrel (*Falco sparverius*)
- European starling (*Sturnus vulgaris*)
- Red-tailed hawk (*Buteo jamaicensis*)
- Swainson's hawk (*Buteo swainsoni*)
- Killdeer (*Charadrius vociferus*)
- Mourning dove (*Zenaida macroura*)
- Anna's hummingbird (*Calypte anna*)
- Black phoebe (*Sayornis nigricans*)
- Cliff swallow (*Petrochelidon pyrrhonota*)
- Northern mockingbird (*Mimus polyglottos*)
- Red-tailed hawk (*Buteo jamaicensis*)
- Red-winged blackbird (*Agelaius phoeniceus*)

Special-Status Species – Plants and Wildlife

Sensitive species are native species that have been accorded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to continued existence and existing knowledge of population levels.

Federal Special-Status Species

- Endangered Species Act (50 Code of Federal Regulations 17.11): Animals listed or proposed for listing as threatened or endangered

- Endangered Species Act (50 Code of Federal Regulations 17.12): Plants listed or proposed for listing as threatened or endangered
- Endangered Species Act (70 Federal Register 24870): Species identified as candidates for future listing as threatened or endangered

State and Local Special-Status Species

- California Endangered Species Act (14 California Code of Regulations 670.5): Species listed or proposed for listing as threatened or endangered by the State of California
- California Department of Fish and Game (Fish & Game Code Section 1900): Plants listed as rare
- California Department of Fish and Game (Fish & Game Code Section 3511): Fully protected birds
- California Department of Fish and Game (Fish & Game Code Section 4700): Fully protected mammals
- California Department of Fish and Game (Fish & Game Code Section 3511): Fully protected reptiles and amphibians
- California Department of Fish and Game (Fish & Game Code Section 3511): Fully protected fish
- California Department of Fish and Game (DFG): Animal species of special concern to DFG—birds (Remsen, 1978), mammals (Williams, 1986), amphibians and reptiles (Jennings and Hayes 1994)
- California Native Plant Society (lists 1B and 2): Plants listed by CNPS as "rare, threatened, or endangered" in California
- California Native Plant Society (Lists 3 and 4): Plants identified by the CNPS as needing further information to determine status
- CEQA (Public Resources Code Section 15380): Species meeting the definition of rare or endangered under CEQA
- San Joaquin County Multi-Species Habitat Conservation and Open Space Plan: Covered species

A summary of potential special-status plant species is provided in Table 3.4-1. A summary of potential special-status wildlife species is provided in Table 3.4-2.

Designated Critical Habitat

No designated critical habitat occurs onsite. However, the onsite drainage canals have indirect connectivity to from the adjacent Walthall Slough to the San Joaquin River, which includes designated critical habitat for the Delta smelt (*Hypomesus transspacificus*) and steelhead trout (*Oncorhynchus mykiss*). There is no possibility of fish passage from Walthall Slough onto the project site as the culvert that drains the irrigated farm fields is positioned above the water level of the slough.

The only fish species observed within the onsite irrigation ditches were non-native mosquito fish.

Table 3.4-1: Summary of Special-Status Plant Species Review

Scientific Name Common Name	Listing Status* USFWS/ CDFG/CNPS	General Habitat Description	Potential for Presence**	Period of Identification
Amsinckia grandiflora Large-flowered fiddleneck	FE/CE/1B.1	Cismontane woodland and valley and foothill grassland habitats. 275 to 550 meters in elevation.	**None.** There are no suitable natural habitats within the project area. There are no recorded occurrences of this species within 5 miles of the project area.	April–May
Astragalus tener var. *tener* Alkali milk-vetch	—/—/1B.2	Playas, valley and foothill grassland in adobe clay, and vernal pools. Restricted to alkaline substrates. 1 to 60 meters in elevation.	**None.** There are no suitable natural habitats within the project area. There are no recorded occurrences of this species within 5 miles of the project area.	March–June
Atriplex joaquiniana San Joaquin spearscale	—/—/1B.2	Chenopod scrub, meadows and seeps, playas, and valley and foothill grassland. Restricted to alkaline soils. 1 to 835 meters in elevation.	**None.** There are no suitable natural habitats within the project area. There are no recorded occurrences of this species within 5 miles of the project area.	April–October
Atriplex minuscula Lesser saltscale	—/—/1B.1	Chenopod scrub, playas, and valley and foothill grassland. Restricted to alkaline, sandy soils. 15 to 200 meters in elevation.	**None.** There are no suitable natural habitats within the project area. There are no recorded occurrences of this species within 5 miles of the project area.	May–October
Blepharizonia plumosa Big tarplant	—/—/1B.1	Valley and foothill grassland. 30 to 505 meters in elevation.	**None.** There are no suitable natural habitats within the project area. There are no recorded occurrences of this species within 5 miles of the project area.	July–October
California macrophylla Round-leaved filaree	—/—/1B.1	Cismontane woodland and valley and foothill grassland habitats. 15 to 1,200 meters in elevation.	**None.** There are no suitable natural habitats within the project area. There are no recorded occurrences of this species within 5 miles of the project area.	March–May

Table 3.4-1 (cont.): Summary of Special-Status Plant Species Review

Scientific Name Common Name	Listing Status* USFWS/ CDFG/CNPS	General Habitat Description	Potential for Presence**	Period of Identification
Carex comosa Bristly sedge	—/—/2.1	Coastal prairie and valley and foothill grassland habitats in clay soils. 0 to 625 meters in elevation.	**None.** There are no suitable natural habitats within the project area. There are no recorded occurrences of this species within 5 miles of the project area.	May–September
Cirsium crassicaule Slough thistle	—/—/1B.1	Chenopod scrub, marshes and swamps, and riparian scrub habitats. 3 to 100 meters in elevation.	**None.** There are no natural habitats within the project area; the site contains only agricultural fields and orchards. There is a recorded occurrence of this species 3 miles southwest of the site.	May–August
Cordylanthus palmatus Palmate-bracted bird's-beak	FE/CE/1B.1	Chenopod scrub and valley and foothill grasslands in alkaline soils. 5 to 155 meters in elevation.	**None.** There are no suitable natural habitats within the project area. There are no recorded occurrences of this species within 5 miles of the project area.	May–October
Delphinium recurvatum Recurved larkspur	—/—/1B.2	Chenopod scrub, cismontane woodland, and valley and foothill grassland habitats in alkaline soils. 3 to 750 meters in elevation.	**None.** There are no suitable natural habitats within the project area. There are no recorded occurrences of this species within 5 miles of the project area.	March–June
Eryngium racemosum Delta button-celery	—/CE/1B.1	Riparian scrub in vernally mesic clay depressions. 3 to 30 meters in elevation.	**None**. There are no suitable natural habitats within the project area to be impacted; the site contains only agricultural fields and orchards. There is a recorded occurrence of this species 1.3 miles northwest of the site.	June–October

Table 3.4-1 (cont.): Summary of Special-Status Plant Species Review

Scientific Name Common Name	Listing Status* USFWS/ CDFG/CNPS	General Habitat Description	Potential for Presence**	Period of Identification
Eschscholzia rhombipetala Diamond-petaled California poppy	—/—/1B.1	Valley and foothill grassland habitat in alkali, clay soils.	**None.** There are no suitable natural habitats within the project area. There are no recorded occurrences of this species within 5 miles of the project area.	March–April
Hisbiscus lasiocarpos Woolly rose-mallow	—/—/2.2	Freshwater marshes and swamps. 0 to 120 meters in elevation.	**Low.** There are no natural habitats within the project area to be impacted; the site contains only agricultural fields and orchards. Irrigation channels within the project area are regularly maintained through dredging. There are no recorded occurrences of this species within 5 miles of the project area.	June–September
Lathyrus jepsonii var. *jepsonii* Delta tule pea	—/—/1B.2	Freshwater and brackish marshes and swamps. 0 to 4 meters in elevation.	**Low.** There are no natural habitats within the project area to be impacted; the site contains only agricultural fields and orchards. Irrigation channels within the project area are regularly maintained through dredging. There are no recorded occurrences of this species within 5 miles of the project area.	May–July
Lilaeopsis masonii Mason's lilaeopsis	—/Rare/1B.1	Riparian scrub and brackish or freshwater marshes and swamps. 0 to 10 meters in elevation.	**Low.** There are no natural habitats within the project area to be impacted; the site contains only agricultural fields and orchards. Irrigation channels within the project area are regularly maintained through dredging. There are no recorded occurrences of this species within 5 miles of the project area.	April–November

Table 3.4-1 (cont.): Summary of Special-Status Plant Species Review

Scientific Name Common Name	Listing Status* USFWS/ CDFG/CNPS	General Habitat Description	Potential for Presence**	Period of Identification
Limosella subulata Delta mudwort	—/—/2.1	Marshes and swamps. 0 to 3 meters in elevation.	**Low.** There are no natural habitats within the project area to be impacted; the site contains only agricultural fields and orchards. Irrigation channels within the project area are regularly maintained through dredging. There are no recorded occurrences of this species within 5 miles of the project area.	May–August
Sagittaria sanfordii Sanford's arrowhead	—/—/1B.2	Assorted shallow freshwater marshes and swamps. 0 to 2,132 feet in elevation.	**Low.** There are no natural habitats within the project area to be impacted; the site contains only agricultural fields and orchards. Irrigation channels within the project area are regularly maintained through dredging. There are no recorded occurrences of this species within 5 miles of the project area.	May–October
Senecio aphanactis Chaparral ragwort	—/—/2.2	Chaparral, cismontane woodland, and coastal scrub habitats; sometimes in alkaline soils. 15 to 800 meters in elevation.	**Low.** There are no natural habitats within the project area; the site contains only agricultural fields and orchards. There are no recorded occurrences of this species within 5 miles of the project area.	January–April

Table 3.4-1 (cont.): Summary of Special-Status Plant Species Review

Scientific Name Common Name	Listing Status* USFWS/ CDFG/CNPS	General Habitat Description	Potential for Presence**	Period of Identification
Symphyotrichum lentum Suisun Marsh aster	—/—/1B.2	Brackish and freshwater marshes and swamps. 0 to 3 meters in elevation.	**Low.** There are no natural habitats within the project area; the site contains only agricultural fields and orchards. Irrigation ditches within the project area are regularly maintained through dredging. There are no recorded occurrences of this species within 5 miles of the project area.	May–November
Trichocoronis wrightii var. *wrightii* Wright's trichocoronis	—/—/2.1	Meadows and seeps, marshes and swamps, riparian forest, and vernal pools. Restricted to alkaline substrates. 5 to 435 meters in elevation.	**Low.** There are no natural habitats within the project area; the site contains only agricultural fields and orchards. Irrigation ditches within the project area are regularly maintained through dredging. There is an occurrence record for this species 1.3 miles northwest of the site, although the species has not been documented here since 1914.	May–September
Tropidocarpum capparideum Caper-fruited tropidocarpum	—/—/1B.1	Valley and foothill grasslands on alkaline hills. 1 to 455 meters in elevation.	**None.** There are no natural habitats within the project area; the site contains only agricultural fields and orchards. There are no recorded occurrences of this species within 5 miles of the project area.	March–April

Table 3.4-1 (cont.): Summary of Special-Status Plant Species Review

Scientific Name Common Name	Listing Status* USFWS/ CDFG/CNPS	General Habitat Description	Potential for Presence**	Period of Identification
***Status Codes:**				
Federal FE = Federally Endangered FT = Federally Threatened FD = Federally Delisted	**State** CE = State Endangered CT = State Threatened SSC = State Species of Special Concern	**CNPS** 1A = Presumed extinct in California 1B.X = Rare, threatened, or endangered in California and elsewhere 2.X = Rare, threatened, or endangered in California, but more common elsewhere Threat rank: 0.1 = Seriously threatened in California 0.2 = Fairly threatened in California 0.3 = Not very threatened in California		
****Potential for Presence**				
High = Species was observed, or suitable habitat is present and the species has been recorded recently within or adjacent to the project area. **Medium** = Species is locally common and suitable habitat is present. **Low** = Habitat is marginal, or suitable habitat is present but species is rare or locally uncommon. **Very Low** = Habitat is poor or absent, or species is very rare and has not been recorded within 5 miles of the project area. **None** = Habitat is absent and/or site is not within range of this species. Source: California Natural Diversity Database, 2010.				

Table 3.4-2: Summary of Special-Status Wildlife Species Review

Scientific Name Common name	Listing Status USFWS/ CDFG/WBWG	General Habitat Description	Potential for Presence	Period of Identification
Invertebrates				
Branchinecta conservatio Conservancy fairy shrimp	FE/—/—	Vernal pools, swales, and ephemeral freshwater habitats.	**None.** The project area contains no vernal pools, swales, or other ephemeral freshwater habitats suitable for this species. There are no recorded occurrences of this species within 5 miles of the project.	Year-round
Branchinecta lynchi Vernal pool fairy shrimp	FT/—/—	Vernal pools, seasonally ponded swales, and ephemeral freshwater habitats.	**None.** The project area contains no vernal pools, swales, or other ephemeral freshwater habitats suitable for this species. There are no recorded occurrences of this species within 5 miles of the project.	Year-round
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT/—/—	Elderberry shrubs (*Sambucus mexicana*).	**None.** Suitable habitat is not present. One elderberry shrubs was observed during surveys. However, there are no recorded occurrences of this species within 5 miles of the project.	Year-round
Lepidurus packardi Vernal pool tadpole shrimp	FE/—/—	Vernal pools and ephemeral freshwater habitats.	**None.** The project area contains no vernal pools, swales, or other ephemeral freshwater habitats suitable for this species. There are no recorded occurrences of this species within 5 miles of the project.	Year-round
Fishes				
Acipenser medirostris Green sturgeon	FT/SSC/—	Anadromous species; large portions of life history are spent in the ocean. Migrations by adults into freshwater	**None.** Irrigation channels onsite are not suitable for this species. There are no recorded occurrences of this species within 5 miles of the project area.	Year-round

Table 3.4-2 (cont.): Summary of Special-Status Wildlife Species Review

Scientific Name Common name	Listing Status USFWS/ CDFG/WBWG	General Habitat Description	Potential for Presence	Period of Identification
		occur between late February and late July, with a spawning period generally ranging from March to July. Spawning takes place in deep, fast-moving water with temperatures between 46.5 and 57˚F. Preferred spawning substrate is likely large cobble, but can range from clean sand to bedrock. Juveniles typically migrate out to sea before the end of their second year, primarily during summer and fall.		
Hypomesus transpacificus Delta smelt	FT/CT/—	Sacramento-San Joaquin Delta.	**None.** Irrigation channels onsite are not suitable for this species. There are no recorded occurrences of this species within 5 miles of the project area.	Year-round
Mylopharodon conocephalus Hardhead	—/SSC/—	Sacramento-San Joaquin Delta.	**None.** Irrigation channels onsite are not suitable for this species. There are no recorded occurrences of this species within 5 miles of the project area.	Year-round
Oncorhynchus mykiss Central Valley steelhead	FT/—/—	Sacramento and San Joaquin rivers and their tributaries.	**None.** Irrigation channels onsite are not suitable for this species. There are no recorded occurrences of this species within 5 miles of the project area.	Year-round
Onchorhynchus tshawytscha Central Valley spring-run chinook	FT/CT/—	Sacramento and San Joaquin rivers and their tributaries.	**None.** Irrigation channels onsite are not suitable for this species. There are no recorded occurrences of this species within 5 miles of the project area.	Year-round

Table 3.4-2 (cont.): Summary of Special-Status Wildlife Species Review

Scientific Name Common name	Listing Status USFWS/ CDFG/WBWG	General Habitat Description	Potential for Presence	Period of Identification
Onchorhynchus tshawytscha Central Valley winter-run chinook	FE/CE/—	Sacramento and San Joaquin rivers and their tributaries.	**None.** Irrigation channels onsite are not suitable for this species. There are no recorded occurrences of this species within 5 miles of the project area.	Year-round
Amphibians				
Ambystoma californiense California tiger salamander	FT/CC/—	Annual grassland habitat and grassy understory of valley-foothill hardwood habitats. Uncommon along streamcourses in valley-foothill riparian habitats. Adults spend most of the year in subterranean refugia, especially burrows of California ground squirrels. Migrate to vernal pools and other temporary rainwater ponds to breed and lay eggs.	**None.** Irrigation channels onsite are not suitable for this species. There are no recorded occurrences of this species within 5 miles of the project area.	March to May (aquatic larval sampling) October through winter *(drift fence surveys)*
Rana boylii Foothill yellow-legged frog	—/CSC/—	Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	**None.** Irrigation channels onsite are not suitable for this species. There are no recorded occurrences of this species within 5 miles of the project area.	April–July (breeding season survey)
Rana draytonii California red-legged frog	FT/CSC/—	Lowlands and foothills in or near permanent or late-season sources of deep water with dense, shrubby, or emergent vegetation.	**None.** Irrigation channels onsite are not suitable for this species. There are no recorded occurrences of this species within 5 miles of the project area.	January through February (breeding season survey)
Spea hammondii Western spadefoot toad	—/CSC/—	Grasslands with temporary pools.	**None.** The project area and surrounding lands are active agricultural fields and orchards. There are no habitats suitable for this species. There are no recorded occurrences of this species within 5 miles of the site.	January–May (adult visual survey)

Table 3.4-2 (cont.): Summary of Special-Status Wildlife Species Review

Scientific Name Common name	Listing Status USFWS/ CDFG/WBWG	General Habitat Description	Potential for Presence	Period of Identification
Reptiles				
Actinemys marmorata Western pond turtle	—/CSC/—	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat for egg-laying. May move overland up to 325 feet for egg laying.	**None.** Aquatic habitats onsite are irrigation ditches, and are not suitable for this species. There are no recorded occurrences of this species within 5 miles of the project area.	Year-round
Masticophis flagellum ruddocki San Joaquin whipsnake	—/SSC/—	Grassland, savanna, chaparral, and woodland.	**None.** The project area and surrounding lands are active agricultural fields and orchards. There are no habitats suitable for this species. There are no recorded occurrences of this species within 5 miles of the site.	Year-round
Phrynosoma coronatum California horned lizard	—/SSC/—	Common in lowlands along sandy washes with scattered low shrubs to provide cover and open areas for basking and loose soils in which they can bury themselves.	**None.** The project area and surrounding lands are active agricultural fields and orchards. There are no habitats suitable for this species. There are no recorded occurrences of this species within 5 miles of the site.	April to September
Thamnophis gigas Giant garter snake	FT/CT/—	Marshes, sloughs, irrigation channels, and occasionally in slow-moving streams. Requires emergent vegetation for cover.	**Low.** Suitable habitat is not present. The project area does not contain suitable emergent vegetation for this species. There is a recorded occurrence of this species approximately 16 miles northeast of the project area.	Mid-March to October

Table 3.4-2 (cont.): Summary of Special-Status Wildlife Species Review

Scientific Name Common name	Listing Status USFWS/ CDFG/WBWG	General Habitat Description	Potential for Presence	Period of Identification
Birds				
Accipiter striatus Sharp-shinned hawk	—/CSC/—	Winter resident throughout much of the state; permanent at higher elevations. Breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers but is not restricted to riparian habitats.	**Moderate.** This species does not nest within the region, although the site may be used for foraging. There are no recorded occurrences of this species within 5 miles of the project area.	Year-round
Agelaius tricolor Tricolored blackbird	—/CSC/—	Largely endemic to California, most numerous in the Central Valley and nearby vicinity. Breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, tall herbs. Feeds in grassland and cropland habitats.	**Low.** There are no emergent wetlands suitable for nesting, although this species may forage on the site. There are recorded occurrences of this species within 5 miles of the site.	April–July
Aquila chrysaetos Golden eagle	—/CFP/—	Breeds on cliffs or in large trees or electrical towers, forages in open habitats.	**Low.** The project area is located in a relatively urbanized and agricultural region that is unsuitable for this species. There are no recorded occurrences of this species within 5 miles of the project area.	Year-round
Athene cunicularia Western burrowing owl	—/CSC/—	Open, dry annual or perennial grasslands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals.	**High.** Banks of the levee may be suitable for nesting and much of the site is suitable for foraging. There are several recorded occurrences of this species within 5 miles of the site.	December 1 to January 31 and April 15 to July 15
Branta hutchinsii leucopareia Cackling goose	FD/—/—	Preferred habitats include lacustrine, fresh emergent wetlands, and moist grasslands, croplands, pastures, and meadows. Occurs mainly during winter	**None.** This species does not nest in the region, and is not typically associated with urbanized regions. There are no recorded	October–February

Table 3.4-2 (cont.): Summary of Special-Status Wildlife Species Review

Scientific Name Common name	Listing Status USFWS/ CDFG/WBWG	General Habitat Description	Potential for Presence	Period of Identification
		in Del Norte County, the San Francisco Bay-Delta, and southern Central Valley.	occurrences of this species within 5 miles of the project area.	
Buteo swainsoni Swainson's hawk	—/CT/—	Uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Breeds in open stands in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grasslands, grain or alfalfa fields, or livestock pastures.	**High.** Suitable foraging habitat is present in agricultural fields, and trees associated with residences or in the southwest corner of the project area may be used for nesting. The species was observed in the southwest of the project area	March to September
Buteo regalis Ferruginous hawk	—/CSC/—	Forages in grasslands and occasionally in other open habitats during migration and winter.	**Low.** This species does not breed in California, although the area is suitable for foraging. There are no recorded occurrences of this species within 5 miles of the project area.	September to April
Circus cyaneus Northern harrier	—/CSC/—	Winter resident throughout most of the state; year-round in the Central Valley and Coast Range. Forages in marshes, grasslands, and ruderal habitats; nests in extensive marshes and wet fields or grasslands.	**Moderate.** Suitable foraging habitat is present throughout alfalfa portions of the project area. There are no recorded occurrences of this species within 5 miles of the project area.	April to September (breeding)
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FC/CE/—	Uncommon to rare summer resident of valley foothill and desert riparian habitats. Inhabits extensive deciduous riparian thickets or forests with dense, low-level, or understory foliage, and which abut on slow-moving watercourses, backwaters, or seeps. Willow is almost always a dominant component of the vegetation. In Sacramento Valley, also utilizes adjacent orchards, especially walnut.	**Low.** There are no natural habitats within the project area to be impacted; the site contains only agricultural fields and orchards. Irrigation channels within the project area are regularly maintained through dredging. There are no recorded occurrences of this species within 5 miles of the project area.	April to September

Table 3.4-2 (cont.): Summary of Special-Status Wildlife Species Review

Scientific Name Common name	Listing Status USFWS/ CDFG/WBWG	General Habitat Description	Potential for Presence	Period of Identification
Dendroica petechia Yellow warbler	—/CSC/—	Requires riparian thickets of willow and other brushy tangles near watercourses for cover. Nests in dense shrubs along streams or rivers.	**Low.** There are no natural habitats within the project area to be impacted; the site contains only agricultural fields and orchards. Irrigation channels within the project area are regularly maintained through dredging. There are no recorded occurrences of this species within 5 miles of the project area.	April–September
Elanus leucurus White-tailed kite	—/CFP/—	Year-round resident. Nests or roosts in dense, broad-leafed deciduous trees. Forages in herbaceous lowlands with variable tree growth and dense populations of voles.	**Moderate.** Agricultural fields within the project area are suitable for foraging, and trees associated with residence may be suitable for nesting. There are no recorded occurrences of this species within 5 miles of the area.	January to August (breeding)
Falco columbarius Merlin	—/CSC/—	Uncommon winter migrant. Seldom found in heavily wooded areas or open deserts. Frequents open habitats at low elevations near water and tree stands. Favors coastlines, lakeshores, and wetlands. Ranges from annual grasslands to ponderosa pine and montane hardwood-conifer habitats.	**Low.** This species does not breed in California, although suitable foraging habitat is present in agricultural fields. There are no recorded occurrences of this species within 5 miles of the project area.	September to May
Falco mexicanus Prairie falcon	—/CSC/—	Year-round resident throughout much of the state; winters in the Central Valley and along the coast. Occurs in open habitats such as grasslands, desert scrub, rangelands, and croplands. Nests in a scrape on a sheltered ledge of a cliff overlooking a large, open area.	**Low.** This species does not breed in the region, although suitable foraging habitat is present in agricultural fields. There are no recorded occurrences of this species within 5 miles of the project area.	Year-round

Table 3.4-2 (cont.): Summary of Special-Status Wildlife Species Review

Scientific Name Common name	Listing Status USFWS/ CDFG/WBWG	General Habitat Description	Potential for Presence	Period of Identification
Falco peregrinus anatum American peregrine falcon	FD/CE/—	Forages in marshes and grasslands. Nesting habitat includes high, protected cliffs and ledges, also utilizes human-made structures. Winters at lower elevations; year-round resident through much of the state.	**None.** The project area contains no habitat suitable for nesting or for foraging by this species. There are no recorded occurrences of this species within 5 miles of the project area.	Consult agency
Haliaeetus leucocephalus Bald eagle	FT/CFP/—	Year-round at ocean shorelines, lake margins, and river courses. Nests in large, old-growth, or dominant live tree with open branchwork, especially ponderosa pine.	**None.** The project area contains no habitat suitable for nesting or for foraging by this species. There are no recorded occurrences of this species within 5 miles of the project area.	Consult agency
Icteria virens Yellow-breasted chat	—/CSC/—	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.	**None.** The project area contains no habitat suitable for nesting or for foraging by this species. There are no recorded occurrences of this species within 5 miles of the project area.	April–July
Lanius ludovicianus Loggerhead shrike	—/CSC/—	Found in a variety of habitats with open areas, available perches, and dense shrubs for nesting.	**Low.** The project area is suitable for foraging, although there are no dense shrubs for nesting. There are no recorded occurrences of this species within 5 miles of the project area.	March to August
Pandion haliaetus Osprey	—/—/—	Ocean shore, bays, freshwater lakes, and larger streams. Generally nests in treetops within 15 miles of fish-producing body of water.	**None.** The project area contains no habitat suitable for nesting or for foraging by this species. There are no recorded occurrences of this species within 5 miles of the project area.	March–September

Table 3.4-2 (cont.): Summary of Special-Status Wildlife Species Review

Scientific Name Common name	Listing Status USFWS/ CDFG/WBWG	General Habitat Description	Potential for Presence	Period of Identification
Progne subis Purple martin	—/CSC/—	An uncommon to rare summer resident in a variety of wooded, low-elevation habitats; a rare migrant in spring and fall, absent in winter. Breeding habitat includes old-growth, multi-layered, open forest, and woodland with snags; forages over riparian areas, forest, and woodlands. Drain holes in bridges and overpasses now commonly used for nesting in urban habitats.	**Low.** The project area does contain valley oak riparian that is suitable for nesting. This area will not be impacted by the project. There are no recorded occurrences of this species within 5 miles of the project area.	April–September
Xanthocephalus xanthocephalus Yellow-headed blackbird	—/CSC/—	Breeds commonly east of Cascade Range and Sierra Nevada, in Imperial and Colorado River valleys, in the Central Valley, and at selected locations in the coast ranges. Nests in fresh emergent wetland with dense vegetation and deep water, often along borders of lakes or ponds. Forages in emergent wetland and moist, open areas, especially cropland and muddy shores of lacustrine habitat.	**None.** The project area contains no fresh emergent habitat suitable for nesting or foraging. There is a recorded occurrence of this species approximately 2.8 miles to the north, but the record is from 1894.	April–July (breeding)
Mammals				
Antrozous pallidus Pallid bat	—/CSC/High	Occurs in a variety of habitats throughout the state to 6,000 feet in elevation. It is most abundant is xeric ecosystems. Pallid bats roost alone, and in both large and small groups. Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees, and human structures such as bridges, barns, porches, bat boxes, and buildings. This species also has been found roosting on or near the ground under stone piles, rags, and	**None.** The project area contains limited roosting habitat, and this species is not commonly associated with agricultural areas. There are no recorded occurrences of this species within 5 miles of the project area.	April to October

Table 3.4-2 (cont.): Summary of Special-Status Wildlife Species Review

Scientific Name Common name	Listing Status USFWS/ CDFG/WBWG	General Habitat Description	Potential for Presence	Period of Identification
		baseboards. Pallid bat is a gregarious species and often roost in colonies of 20 to several hundred individuals. Non-migratory. Hibernates during winter, with very little activity.		
Corynorhinus townsendii Townsend's big-eared bat	—/CSC/High	Occurs throughout the State to 11,000 feet in elevation. Distribution correlated with availability of caves and cave-like roosting habitat. Roosts in colonies in caves, mines, tunnels, or buildings in mesic habitats. The species forages along habitat edges, gleaning insects from bushes and trees. Seasonal movement patterns not well understood. There may be local migration along altitudinal gradients. Hibernates during winter, with very little activity.	**None.** The project area contains no roosting habitat, and this species is not commonly associated with agricultural areas. There are no recorded occurrences of this species within 5 miles of the project area.	Consult agency
Euderma maculata Spotted bat	—/CSC/High	Distribution is extremely patchy and is correlated closely with prominent rock features. Non-migratory, although there may be local migration along altitudinal gradients. Depends upon rock-faced cliff roosting habitat. Thought to roost singly during the day. Forages throughout the night, so it does not utilize night roosts.	**None.** The project area contains no roosting habitat, and this species is not commonly associated with agricultural areas. There are no recorded occurrences of this species within 5 miles of the project area.	Year-round
Eumops perotis californicus Greater western mastiff bat	—/CSC/High	Roosts in rock crevices of vertical cliffs and less commonly in buildings. Does not migrate or hibernate.	**None.** The project area contains limited roosting habitat, and this species is not commonly associated with agricultural areas. There are no recorded occurrences of this species within 5 miles of the project area.	Year-round

Table 3.4-2 (cont.): Summary of Special-Status Wildlife Species Review

Scientific Name **Common name**	**Listing Status USFWS/ CDFG/WBWG**	**General Habitat Description**	**Potential for Presence**	**Period of Identification**
Lasiurus blossevillii Western red bat	—/CSC/High	Western red bat is a solitary, foliage-roosting species. Day roosts in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. Closely associated with riparian habitats; cottonwood stands are preferred roost areas. Roosts behind foliage and hidden from sight. Females do not form maternity colonies, but give birth singly in trees. Migrates south in the winter, and returns north for breeding.	**None.** The project area contains limited roosting habitat. There are no recorded occurrences of this species within 5 miles of the project area.	April to October
Myotis thysanodes Fringed myotis	—/—/High	Widely distributed throughout California in all habitat types. Known to migrate, but very little information available regarding migration patterns. Most abundant in xeric woodlands, such as oak and pinyon-juniper forests. Roosts in caves, buildings, underground mines, rock crevices in cliff faces, and bridges in groups ranging from 10 to 2,000. Hibernates in buildings or underground mines	**Low.** The project area contains limited roosting habitat, and this species is not commonly associated with agricultural areas. There are no recorded occurrences of this species within 5 miles of the project area	Year-round
Myotis volans Long-legged myotis	—/—/High	Found primarily in forested areas, especially blue oak-foothill pine, montane hardwood-conifer, ponderosa pine, and Sierran mixed conifer. Migrates short distances to hibernation areas. Roosts in abandoned buildings, cracks in the ground, bridges, cliff crevices, exfoliating tree bark, and hollows within snags. Females form large maternity colonies of hundreds of individuals. Hibernates in winter in caves and mines.	**None.** The project area contains limited roosting habitat, and this species is not commonly associated with agricultural areas. There are no recorded occurrences of this species within 5 miles of the project area	Year-round

Table 3.4-2 (cont.): Summary of Special-Status Wildlife Species Review

Scientific Name **Common name**	**Listing Status USFWS/ CDFG/WBWG**	**General Habitat Description**	**Potential for Presence**	**Period of Identification**
Neotoma fuscipes riparia Riparian woodrat	FE/—/—	The riparian woodrat is the only subspecies found on the floor of the Central Valley and it is restricted today to small remnant patches of riparian forest along the Stanislaus River. Highly arboreal, requiring evergreen or live oaks and other thick-leaved trees and shrubs.	**Low.** The project area contains riparian habitat in the southwest corner that will not be impacted. The riparian woodrat is generally only found along the Stanislaus River. There are no recorded occurrences of this species within 5 miles of the project area.	Year-round
Sylvilagus bachmani riparius Riparian brush rabbit	FE/CE/—	Historically occurred in riparian forests along the San Joaquin River and Stanislaus rivers. Currently found only along the Stanislaus River in Caswell Memorial State Park	**Moderate.** The project area contains riparian habitat in the southwest corner that will not be impacted. There is an occurrence record of this species 1.7 miles west of the site.	Year-round
Taxidea taxus American badger	—/SSC/—	Herbaceous, shrub, and open stages of most habitats with dry, friable soils.	**None.** The project area contains no natural, open habitats. There are no recorded occurrences of this species within 5 miles of the project.	Year-round
Vulpes macrotis mutica San Joaquin kit fox	FE/CT/—	Occur in annual grasslands or grassy open stages of vegetation dominated by scattered brush, shrubs, and scrub with loose-textured, sandy, and loamy soils.	**Very Low.** There is no suitable habitat for this species within the project area. The property contains active agricultural fields and orchards. However, this species may disperse across the site. There are no recorded occurrences of this species within 5 miles of the project.	Year-round

Table 3.4-2 (cont.): Summary of Special-Status Wildlife Species Review

Scientific Name Common name	Listing Status USFWS/ CDFG/WBWG	General Habitat Description	Potential for Presence	Period of Identification
Status Codes				
Federal FE = Federally Endangered FT = Federally Threatened FD = Federally Delisted	**State** CE = State Endangered CT = State Threatened CSC = State Species of Special Concern CC = State Candidate	**WBWG** High = Species imperiled or at high risk of imperilment. Medium = Lack of information prevents assessment of status and should be considered a threat.		
****Potential for Presence**				
High = Species was observed, or suitable habitat is present and the species has been recorded recently within or adjacent to the project area. **Medium** = Species is locally common and suitable habitat is present. **Low** = Habitat is marginal, or suitable habitat is present but species is rare or locally uncommon. **Very Low** = Habitat is poor or absent, or species is very rare and has not been recorded within 5 miles of the project area. **None** = Habitat is absent and/or site is not within the range of this species. Source: California Natural Diversity Database, 2010.				

3.4.3 - Regulatory Framework

Federal

Federal Endangered Species Act (FESA)

The purposes of this Act are to provide a means to conserve the ecosystems that endangered and threatened species depend on and to provide a program for conservation and recovery of these species. The Federal Endangered Species Act (FESA) defines species as "endangered" and "threatened" and provides regulatory protection for any species so designated. Section 9 of the FESA prohibits the take of species listed by the U.S. Fish and Wildlife Service (USFWS) as threatened or endangered. As defined in the FESA, take means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in such conduct." Harm is defined by the USFWS to encompass "an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 Code of Federal Regulations Section 17.3). Thus, some instances of habitat modification can constitute prohibited "take" if it can be shown that such modification can be expected to result in injury or death to one or more individuals of a listed species.

In recognition that take cannot always be avoided, Section 10(a) of the FESA includes provisions for take that is incidental to, but not the purpose of, otherwise lawful activities. Section 10 (a)(1)(B) permits (incidental take permits) may be issued if taking is incidental and will not appreciably reduce the likelihood of survival and recovery of the species in the wild.

Section 7(a)(2) of the FESA requires any federal agency taking an action, including the USFWS, to evaluate a proposed project with respect to any species proposed for listing or already listed as endangered or threatened and their critical habitat, if any is proposed or designated. Federal agencies must undertake programs for the conservation of endangered and threatened species, and are prohibited from authorizing, funding, or carrying out any action that will jeopardize a listed species or destroy or modify its "critical habitat." As defined in the FESA, "individuals, organizations, states, local governments, and other non-Federal entities are affected by the designation of critical habitat only if their actions occur on Federal lands, require a Federal permit, license, or other authorization, or involve Federal funding."

The term critical habitat for a threatened or endangered species means either (1) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of FESA Section 1533 on which are found those physical or biological features (Constituent elements) that are (a) essential to the conservation of the species and (b) which may require special management considerations or protections; and (2) species outside the geographical outside the geographical area occupied by the species at the time it is listed, which has been determined to be essential for the conservation of the species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act makes it unlawful to pursue, capture, kill, or possess or attempt to do the same to any migratory bird or part, nest, or egg of any such bird listed in wildlife protection treaties between the United States, Great Britain, Mexico, Japan, and the countries of the former Soviet Union. As with the FESA, the Migratory Bird Treaty Act authorizes the Secretary of the Interior to issue permits for incidental take.

Federal Clean Water Act: Sections 404 and 401

Section 404 of the Federal Clean Water Act, which is administered by the United States Army Corps of Engineers (USACE), regulates the discharge of dredge and fill material into waters of the United States (U.S.). The definition of "Waters of the U.S." is set forth in the Title 33 Code of Federal Regulations (CFR) 328.3. The term "waters of the United States" means (1) navigable waters, (2) inter state waters, (3) intrastate waters with an interstate commerce nexus, (4) impoundments of the these waters, (5) non-navigable tributaries, including non-relatively permanent waters (intermittent, ephemeral streams) that exhibit a significant chemical, physical or biological nexus to downstream jurisdictional waters, (6) territorial seas, and (7) wetlands adjacent to otherwise jurisdictional waters.

With respect to adjacent wetlands, the USACE defines "adjacent" to mean "bordering, contiguous or neighboring." Typically, wetlands within the floodplain of jurisdictional features (lakes, rivers, tributaries, etc.) will be considered "adjacent." According to the USACE, wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation adapted for life in saturated soil conditions (33 CFR 328.3(b)). Wetlands generally include swamps, marshes, bogs, and similar areas.

Any project impacting jurisdictional waters/wetlands must obtain a dredge/fill (404) permit from the USACE prior to commencement of activities affecting those resources.

In connection with notification to the USACE under Section 404 of the Clean Water Act (CWA), pursuant to 33 CFR Part 330, a written request for Section 401 water quality certification must be submitted to the RWQCB to ensure that no degradation of water quality will result from the proposed project. Subject to CWA section 401(a)(1), the USACE cannot issue a section 404 dredge/fill permit until such time as a CWA section 401 Water Quality Certification has been approved by the applicable RWQCB. In the nationwide permitting program, compliance with the Section 401 is set forth in general condition (GC 21).

In order to meet the requirements of the RWQCB for issuance of a 401-water quality certification, the project proponent must provide assurances that the project will not adversely affect the water quality of receiving water bodies. A written request for 401 water quality certification must be prepared and submitted to the RWQCB for review. The request will include a detailed project description, a description of proposed impacts, identification and discussion of beneficial uses of affected receiving

waters (as described within the appropriate Basin Plan), a water quality plan identifying project-specific Best Management practices (BMPs), discussion of other approvals and certifications being obtained, a conceptual restoration plan, and a completed notification form.

State

California Endangered Species Act (CESA)

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. The State considers a threatened species as one present in such small numbers throughout its range that it is considered likely to become an endangered species in the near future in the absence of special protection or management. A rare species is considered as present in such small numbers throughout its range that it may become endangered if its present environment worsens. The designation "rare species" applies only to California native plants. State threatened and endangered species include both plants and wildlife (not including invertebrates) and are legally protected against "take" as this term is defined in the CESA (California Fish & Game Code Section 2050, et seq.). "Species of Special Concern" is an informal designation used by the CDFG for some declining wildlife species that are not officially listed as endangered, threatened, or rare. This designation does not provide legal protection, but it signifies that these species are recognized as vulnerable by CDFG.

Sections 1600–1603 of the State Fish and Game Code

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California are subject to the regulatory authority of the CDFG pursuant to Sections 1600 through 1603 of the California Code, requiring preparation of a Streambed Alteration Agreement. Under the Code, a stream is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Included are watercourses with surface or subsurface flows that support or have supported riparian vegetation. CDFG also has jurisdiction within altered or artificial waterways based on the value of those waterways to fish and wildlife and has jurisdiction over dry washes that carry water ephemerally during storm events.

Sections 2080 and 2081 of the State Fish and Game Code

Section 2080 of the State Fish and Game Code states that no person shall import into this state (California), export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission [State Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the Native Plant Protection Act, or the California Desert Native Plants Act. Under Section 2081 of the Code, the CDFG may authorize individuals or public agencies to import, export, take, or possess, any state-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or Memoranda of Understanding if (1) the take is incidental to an otherwise lawful activity, (2) impacts of the authorized take are

minimized and fully mitigated, (3) the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and (4) the applicant ensures adequate funding to implement the measures required by CDFG. CDFG shall make this determination based on the best scientific and other information that is reasonably available and shall include consideration of the species' capability to survive and reproduce.

Section 3503 of the State Fish and Game Code

Section 3503 of the State Fish and Game Code states, "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto."

Natural Community Conservation Planning Program

The Natural Community Conservation Planning Program, managed by CDFG, is designed to conserve multiple species and their habitats, while also providing for the compatible use of private land. Through local planning, the Natural Community Conservation Planning Program process protects wildlife and habitat before the landscape becomes so fragmented or degraded by development that listings are required under the FESA. Instead of saving small, disconnected units of habitat for just one species at a time, agencies, local jurisdictions, and other interested parties have an opportunity, through the Natural Community Conservation Planning Program, to work cooperatively to develop plans that consider broad landscapes, or "ecosystems," and the needs of many species. Partners enroll in the programs and, by mutual consent, habitat areas with high conservation values are set aside and may not be developed. Partners also agree to study, monitor, and develop management plans for these reserve areas. The program provides a process for fostering economic growth by allowing approved development in enrolled areas with lower conservation values.

Native Plant Protection Act

The Native Plant Protection Act includes measures to preserve, protect, and enhance rare and endangered native plants. The definition of "rare and endangered" differs from those contained in CESA. However, the list of native plants afforded protection pursuant to this act includes those listed as rare and endangered under the CESA. The Native Plant Protection Act provides limitations on take as follows: "No person shall import into this state, or take, possess, or sell within this state" any rare or endangered native plant, except in compliance with provisions of the act. Individual landowners are required to notify the CDFG at least 10 days in advance of changing land uses to allow the CDFG to salvage any rare or endangered native plant material.

California Native Plant Society

The CNPS is a statewide resource conservation organization that has developed an inventory of California's special-status plant species. This inventory is a summary of information on the distribution, rarity, and endangerment of California's vascular plants. This rare plant inventory consists of four lists. CNPS presumes that List 1A plant species are extinct in California because they have not been seen in the wild for many years. CNPS considers List 1B plants as rare, threatened, or

endangered throughout their range. List 2 plant species are considered rare, threatened, or endangered in California, but more common in other states. Plant species on lists 1A, 1B, and 2 meet CDFG criteria for endangered, threatened, or rare listing. Plant species for which CNPS requires additional information in order to properly evaluate their status are included on List 3. List 4 plant species are those of limited distribution in California whose susceptibility to threat is considered low at the current time.

Local

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), which encompasses all of San Joaquin County, provides a strategy for balancing habitat and open space conservation with the needs of economic development. The City of Manteca is a signatory to the SJMSCP. The SJMSCP objectives include balancing the need to conserve open space and the need to convert open space to non-open space uses while protecting the region's agricultural economy; preserving landowner property rights; providing for the long-term management of plant, fish and wildlife species, especially those that are currently listed or may be listed in the future under FESA or CESA; providing and maintaining multiple-use open spaces that contribute to the quality of life of the residents of San Joaquin County; and accommodating a growing population while minimizing costs to project proponents and society at large.

The SJMSCP, in accordance with FESA Section 10(a)(1)(B) and CESA Section 2081(b) Incidental Take Permits, provides compensation for the conversion of open space to non-open space uses that affects the plant, fish and wildlife species covered by the plan.

The mitigation ratios and compensation fees are determined on the basis of the type of lands that are being converted. The plan has established four land cover types: (1) Agricultural Habitat Lands, (2) Natural Lands (non-wetlands), (3) Natural Lands (vernal pools), and (4) Natural Lands (non-vernal pool wetlands).

City of Manteca Heritage Tree Ordinance (Title 17.19.060)

Existing trees over 6 inches in trunk diameter, measured 4.5 feet above ground level (DBH), shall be protected or replaced with like sized specimens of the same species/type. The City of Manteca's Parks and Recreation Department and Planning Department shall be notified of any planned construction or grade change within the proximity of existing mature trees. Agricultural and farming orchard areas of 1 acre or more are exempt from the ordinance. The almond orchard within the project area is 88.5 acres and is thus exempt from the heritage tree ordinance.

3.4.4 - Methodology

Vegetation communities are classified according to A Manual of California Vegetation. This system classifies communities based upon floristic components, which are the plant taxa making up the vegetation of a given area. The floristically based system classifies communities at the lower units of

the series or association, thereby allowing for a finer-scale description of the community and a better understanding of community function.

The project area was surveyed on July 9, 2010 by Dale Hameister, MBA Biologist/Regulatory Specialist. The entire project area was surveyed on foot. During the biological resource assessment, the property was also evaluated for the presence of state and federal jurisdictional waters.

3.4.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, biological resources impacts resulting from the implementation of the proposed project would be considered significant if the project would:

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?

b.) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

c.) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d.) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

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

f.) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

3.4.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Special-Status Species

Impact BIO-1: Development activities may have a substantial adverse effect, either directly or through habitat modifications, on special-status wildlife species.

Impact Analysis

This impact will evaluate the potential for the within the project area to adversely affect special-status species.

Biological surveys determined that no sensitive species were observed within the areas to be impacted within the project area, and the project area does not contain suitable habitat for most potential species. The lack of suitable habitat is due to the heavily maintained agricultural land dominating the project site and lack of natural habitat, except that the valley oak riparian habitat within the southwest corner of the project area will not be impacted. One Swainson's hawk, a state threatened species, was observed in the southwest corner of the project area near the valley oak riparian habitat along Walthall Slough. Swainson's hawk is an SJMSCP-covered species, and the project area is within the City of Manteca and is designated for development. There is a moderate to high potential for other sensitive raptor species to utilize the project area for foraging, including sharp-shinned hawk, northern harrier, white-tailed kite, and western burrowing owl. None of these species is listed as threatened or endangered under the FESA or CESA.

There is a recorded occurrence of riparian brush rabbit (*Sylvilagus bachmani riparius*) 1.7 miles west of the project area. There is riparian habitat in the southwest corner of the project area. The riparian area will not be impacted by the project. Therefore, no impacts to riparian brush rabbit are anticipated.

No designated critical habitat occurs onsite. However, the onsite irrigation ditches indirectly connects to the San Joaquin River via the Walthall Slough, which includes designated critical habitat for the Delta smelt (*Hypomesus transspacificus*) and steelhead trout (*Oncorhynchus mykiss*). The San Joaquin River is located approximately 1.46 river miles downstream from the onsite drainage canal. Neither Delta smelt nor steelhead trout were observed in the onsite drainage/irrigation canal during the field surveys. Irrigation ditches within the project area only support non-native mosquito fish. There are no recorded occurrences of Delta smelt or steelhead trout species within 5 miles of the project area.

The onsite irrigation ditches are artificial conveyances, which though soft-bottomed does not exhibit pools, riffles, riparian (refugia) cover or surrounding, adjacent wetland habitat that might otherwise provide suitable habitat for listed aquatic or semi-aquatic vertebrates (such as giant garter snake, Western spadefoot toad, Western pond turtle, California tiger salamander, foothill yellow legged frog, or California red-legged frog). There are no recorded occurrences of these species within 5 miles of the site with the exception of one record of a California tiger salamander larva in a pond adjacent to State Route 120 approximately 0.5 mile north of the project area. California tiger salamanders breed

in ponds and deep vernal pools that last into late spring. The lack of suitable breeding habitat within the project area indicated the potential for occurrence to be low.

In summary, several sensitive raptor species have the potential to use the project area for foraging. Mitigation Measures BIO-1a and BIO-1b require pre-construction surveys for these species. In the event that these species are observed to be onsite, avoidance measures must be implemented. Therefore, with the implementation of mitigation, impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-1a If ground clearing or vegetation removal activities occur during the nesting season (February 15 through August 31), then pre-construction surveys for nesting birds shall be conducted in all area suitable for nesting that are located within 250 feet of the project area to be impacted. Surveys shall be conducted no more than 15 days prior to the beginning of ground disturbance. If an active nest is located, a 250-foot buffer shall be delineated and maintained around the nest until a qualified biologist has determined that fledging has occurred. Alternatively, CDFG may be consulted to determine if the protective buffer can be reduced based upon individual species responses to disturbance. This mitigation measure does not apply if ground clearing or vegetation removal activities occur outside of the nesting season (September 1 through February 1).

MM BIO-1b No more than 30 day prior to the beginning of ground disturbance, a pre-construction survey for burrowing owls shall be conducted by a qualified biologist within the areas to be impacted in general accordance with the Burrowing Owl Survey Protocol and Mitigation Guidelines by the California Burrowing Owl Consortium. Should the surveys be scheduled to occur during the period extending from February 1 through May 1, then surveys shall be conducted no more that 15 days prior to the start of ground disturbance. Surveys shall be conducted from 2 hours before sunset to 1 hour after sunset, or from 1 hour before sunrise to 2 hours after sunrise, and shall be conducted during weather conducive to observing owls outside of their burrows. No surveys shall occur during heavy rain, high winds, or dense fog. If occupied burrows are found, mitigation for potential impacts shall follow the guidelines outlined by the Burrowing Owl Survey Protocol and Mitigation Guidelines, including passive relocation.

Level of Significance After Mitigation

Less than significant impact.

Riparian Habitat and Sensitive Natural Communities

Impact BIO-2: Development activities may have a substantial adverse effect on riparian habitat.

Impact Analysis

This impact will evaluate the potential for development within the project to adversely affect riparian habitat and sensitive natural communities.

There are areas of sensitive riparian habitat or sensitive natural communities within the proposed impact area of the project area. There are areas of valley oak riparian habitat along the Walhall Slough in the southwest corner of the project site. There are no proposed impacts within the areas containing riparian habitat.

The project area contains irrigation ditches (6.81 acres), which are subject to state jurisdiction under Fish and Game Code 1600/1602. This is due to the presence of aquatic vegetation and wildlife. The habitat quality of the irrigations ditches is low. There will be impacts to 4.03 acres of irrigation ditches by the project. As such, Mitigation Measure BIO-2 is proposed requiring the project applicant to obtain necessary approvals from the appropriate agencies with jurisdiction over the irrigation ditches. A provision in the mitigation measure requires the applicant to mitigate the loss of impacted resources through onsite restoration, offsite restoration, or purchase of credits at an agency-approved mitigation bank in the region at no less than a 1:1 ratio. With the implementation of mitigation, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-2 Prior to issuance of grading permits within any impacted resource area, the project applicant shall obtain all required authorization from agencies with jurisdiction over the irrigation ditches within the project area. Such agencies may include but are not limited to the United States Army Corps of Engineers, the California Department of Fish and Game, and the Central Valley Regional Water Quality Control Board. Impacted resources shall be offset through onsite restoration, offsite restoration, or purchase of credits at an agency-approved mitigation bank in the region at no less than a 1:1 ratio.

Level of Significance After Mitigation

Less than significant impact.

Wetlands

Impact BIO-3:	**Development activities may have a substantial adverse effect on federally protected wetlands.**

Impact Analysis

This impact will evaluate the potential for the project to adversely affect wetlands.

The delineation of waters of the United States identified one feature, the irrigation ditch (D-5), that supports relatively permanent flows, aquatic vegetation, and is adjacent to Walthall Slough (a jurisdictional, navigable water). As such, the drainage feature is subject to USACE jurisdiction under Section 404 of the Clean Water Act. This drainage feature is along the southern boundary of the project area, south of the levee, and will not be impacted by the proposed project.

The Drainage Canal supports hydrophytic vegetation (including Canadian water weed, water cress, duckweed); however, none of these hydrophytes extended above the OHWM of the feature. No adjacent wetlands were observed onsite. Similarly, no vernal pools, depressional seasonal wetlands or other wetland types were observed outside of the irrigation ditch.

The other irrigation ditches within the project area were wholly created in uplands, do not receive natural flows from outside of the project area, and are not connected hydrologically with Walthall Slough. Therefore, they do not have hydrological connectivity with a navigable waterway.

Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Wildlife or Fish Movement

Impact BIO-4:	**Development activities would not interfere substantially with the movement of any native resident or migratory fish or wildlife species.**

Impact Analysis

This impact will evaluate the potential for development of the project to adversely affect wildlife or fish movement.

Although the San Joaquin River (1.46 river miles downstream) supports protected populations of Delta smelt and steelhead, there are no recorded occurrences of this species within 5 miles of the

project. Similarly, the project is outside the Corridor/species movement corridors established in the SJMSCP for the San Joaquin River Wildlife Corridor, San Joaquin kit fox, and giant garter snake. The only non-native mosquito fish were observed within the aquatic resources onsite. In addition, there is no potential for fish passage from the Walthall Slough onto the irrigation ditches within the project site, as the culvert that returns irrigation water to the slough is above the water level of the slough.

The southern portion of the project site will remain in agricultural production and, therefore, would continue to facilitate wildlife movement. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Conflicts With Local Biological Policies or Ordinances

Impact BIO-5: Development activities may conflict with local biological policies or ordinances.

Impact Analysis

This impact will evaluate the potential for impacts within the project area to conflict with local biological policies or ordinances.

The City of Manteca tree ordinance (17.19.060) requires notification, protection, and/or replacement of any trees with truck diameters over 6 inches and measuring 4.5 feet above ground level. Agricultural and farming orchard areas of 1 acre or more are exempt from Section 17.19.030. The almond orchard within the project area is 88.5 acres and, therefore, is exempt from the heritage tree ordinance. Accordingly, Mitigation Measure BIO-5 requires compliance with the tree ordinance. With the implementation of this mitigation measure, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-5 Prior to issuance of grading permits for any activities that would remove one or more trees subject to City of Manteca Ordinance 17.19.060, the applicant shall prepare and submit a tree removal and replacement plan to the City of Manteca for review and approval. The plan shall identify all trees proposed for removal and proposed

replacement tree species and locations. Replacement shall occur at no less than a 1:1 ratio. All replacement trees shall be no less than a 24-inch-box-size species.

Level of Significance After Mitigation

Less than significant impact.

Conservation Plan

Impact BIO-6: Development activities may conflict with the provisions of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.

Impact Analysis

The project site is within the boundaries of the SJMSCP and is subject to the plan requirements. The project site is designated "Urban Lands" by the SJMSCP Planned Land Use Map because it had been within the Manteca city limits at the time the plan took effect on January 1, 2001. As such, the SJMSCP contemplates urban development on this site; therefore, the development of the proposed project would not conflict with the provisions of the plan.

The project site is within the Category A (No Pay), Category B (Other Open Space), and Category C (Agricultural Habitat Open Space) fee zones of the SJMSCP. Development activities within Category B and Category C require payment of fees to compensate for the loss of habitat. As such, Mitigation Measure BIO-6 requires payment of fees at the time grading permits are sought. With the implementation of this mitigation measure, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-6 Prior to issuance of grading permits for the proposed project, the applicant shall pay all fees in accordance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.

Level of Significance After Mitigation

Less than significant impact.

3.5 - Cultural Resources

3.5.1 - Introduction

This section describes the existing cultural resources setting and potential effects from project implementation on the site and its surrounding area that are based on record search results from the Central California Information Center (CCIC) and the Native American Heritage Commission (NAHC), a focused field survey of the project area, and the findings of a previous Archaeological Resources Assessment for Feasibility Study, prepared by Basin Research in 2005. The cultural resource documentation supporting this section is provided in Appendix E.

3.5.2 - Environmental Setting

Overview

The term "cultural resources" encompasses historic, archaeological, and paleontological resources, and burial sites. Below is a brief summary of each component:

- **Historic Resources:** Historic resources are associated with the recent past. In California, historic resources are typically associated with the Spanish, Mexican, and American periods in the State's history and are generally less than 200 years old.
- **Archaeological Resources:** Archaeology is the study of prehistoric human activities and cultures. Archaeological resources are generally associated with indigenous cultures.
- **Paleontological Resources:** Paleontology is the study of plant and animal fossils.
- **Burial Sites:** Burial sites are formal or informal locations where human remains, usually associated with indigenous cultures, are interred.

Cultural Setting

Prehistory

Early archaeological investigations in central California were conducted at sites located in the Sacramento-San Joaquin Delta region. The first published account documents investigations in the Lodi and Stockton area. The initial archaeological reports typically contained descriptive narratives, with more systematic approaches sponsored by Sacramento Junior College in the 1930s. At the same time, University of California at Berkeley excavated several sites in the lower Sacramento Valley and Delta region, which resulted in recognizing archaeological site patterns based on variations of inter-site assemblages. Research during the 1930s identified temporal periods in central California prehistory and provided an initial chronological sequence. In 1939, it was noted that each cultural period led directly to the next and that influences spread from the Delta region to other regions in central California. In the late 1940s and early 1950s, Beardsley documented similarities in artifacts among sites in the San Francisco Bay region and the Delta and refined his findings into a cultural model that ultimately became know as the Central California Taxonomic System (CCTS). This system proposed a uniform, linear sequence of cultural succession. To address some of the flaws in

the CCTS system, a revision that incorporated a system of spatial and cultural integrative units was introduced. The cultural, temporal, and spatial units were separated from each other and assigned to six chronological periods: Paleo-Indian (10000 to 6000 B.C.); Lower, Middle and Upper Archaic (6000 B.C. to A.D. 500); and Emergent (Upper and Lower, A.D. 500 to 1800). In addition, several patterns—a general way of life shared within a specific geographical region—were defined. These patterns include:

- Windmiller Pattern or Early Horizon (3000 to 1000 B.C.)
- Berkeley Pattern or Middle Horizon (1000 B.C. to A.D. 500)
- Augustine Pattern or Late Horizon (A.D. 500 to historic period)

Brief descriptions of these temporal ranges and their unique characteristics follow.

Windmiller Pattern or Early Horizon (3000 to 1000 B.C.)

Characterized by the Windmiller Pattern, the Early Horizon was centered in the Cosumnes district of the Delta and emphasized hunting rather than gathering, as evidenced by the abundance of projectile points in relation to plant processing tools. Additionally, atlatl, dart, and spear technologies typically included stemmed projectile points of slate and chert but minimal obsidian. Burials occurred in cemeteries and intra-village graves. These burials typically were ventrally extended, although some dorsal extensions are known with a westerly orientation and a high number of grave goods. Trade networks focused on acquisition of ornamental and ceremonial objects in finished form rather than on raw material. The presence of artifacts made of exotic materials such as quartz, obsidian, and shell indicates an extensive trade network that may represent the arrival of Utian populations into central California. Also indicative of this period are rectangular *Haliotis* and *Olivella* shell beads, and charmstones that usually were perforated.

Berkeley Pattern or Middle Horizon (1000 B.C. to A.D. 500)

The Middle Horizon is characterized by the Berkeley Pattern, which displays considerable changes from the Early Horizon. This period exhibited a strong milling technology represented by minimally shaped cobble mortars and pestles, although metates and manos were still used. Dart and atlatl technologies during this period were characterized by non-stemmed projectile points made primarily of obsidian. It is suggested that the Berkeley Pattern marked the eastward expansion of Miwok groups from the San Francisco Bay Area. Compared with the Early Horizon, there is a higher proportion of grinding implements at this time, implying an emphasis on plant resources rather than on hunting. Typical burials occurred within the village with flexed positions, variable cardinal orientation, and some cremations. Grave goods during this period are generally sparse and typically include only utilitarian items and a few ornamental objects. During this period, larger populations are suggested by the number and depth of sites compared with the Windmiller Pattern. It is believed that the Berkeley Pattern reflects gradual expansion or assimilation of different populations rather than sudden population replacement and a gradual shift in economic emphasis.

Augustine Pattern or Late Horizon (A.D. 500 to Historic Period)

The Late Horizon is characterized by the Augustine Pattern, which represents a shift in the general subsistence pattern. Changes include the introduction of bow and arrow technology; and most importantly, acorns became the predominant food resource. Trade systems expanded to include raw resources as well as finished products. Burial patterns retained the use of flexed burials with variable orientation, but there was a reduction in the use of ochre and widespread evidence of cremation. It has been suggested that the Augustine Pattern represents expansion of the Wintuan population from the north, which resulted in combining new traits with those established during the Berkeley Pattern.

Central California research has expanded from an emphasis on defining chronological and cultural units to a more comprehensive look at settlement and subsistence systems. This shift is illustrated by the early use of burials to identify mortuary assemblages and more recent research using osteological data to determine the health of prehistoric populations. Although debate continues over a single model or sequence for central California, the general framework consisting of three temporal/cultural units is generally accepted, although the identification of regional and local variation is a major goal of current archaeological research.

Native American Background

At the time of European contact, most of the San Joaquin Valley and the foothills of the western slope of the Sierra Nevada were occupied by the Yokuts, who are generally recognized as having three major subgroups: the Northern Valley, the Foothill, and the Southern Valley. Each of these ethnolinguistic groups was composed of autonomous, culturally and linguistically related tribes or tribelets. Ethnographic evidence suggests the project area was part of the Northern Valley Yokuts territory.

The Northern Valley Yokuts, who lived along the San Joaquin River and its tributaries and within the vicinity of the project area, are one of the least known of the California Indian groups. This is due to the almost complete destruction of their tribal life in the early 19th century.

What can be gleaned from the diaries and reports of Spanish soldiers and priests is that fish, waterfowl, and acorns were important food resources for the Northern Valley Yokuts. The local rivers and their tule marshes contained salmon, sturgeon, perch, suckers, and pike, which were caught using nets, weighted with stone sinkers and bone harpoons. Waterfowl, such as geese, ducks, and other aquatic birds, were abundant in the marshes and probably played a major role in the Northern Valley Yokuts subsistence base. Wild plant resources, especially acorns, were of prime importance and in a good year, a valley oak could produce 300 to 500 pounds of acorns, which were then ground into meal and cooked into porridge. Tule reed roots were likewise gathered and ground into meal that was traditionally served as porridge.

Stone mortars and pestles, milling stones, hammers, choppers, and projectile points were manufactured from local rock sources. Notably, although obsidian was imported into the area, it was

used infrequently for tools or weapons. Bone tools, particularly awls, were used in basket manufacture.

Most villages were built near rivers on elevated land to avoid flooding during heavy rains or spring runoff from the Sierras. Archaeological excavations indicate that houses were single-family dwellings, probably made with an oval framework of lightweight poles covered by mats of tule reeds. Hard-packed earthen floors 25 to 40 feet in diameter were constructed several feet below ground level. Communities typically contained a sweathouse and sometimes a large ceremonial structure. The size of the Yokuts communities is uncertain, but estimates indicate that the principal settlements contained 200-250 inhabitants. Contact with Europeans was particularly devastating for the Northern Valley Yokuts. This group was adversely impacted by missionization in the early 1800s, European diseases, and the influx of miners and settlers as a result of the 1849 Gold Rush.

Contact with the Spanish commenced early in the 19th century and normally consisted of sporadic visits by small exploration parties. However, between 1805 and the 1820s, Franciscan priests from the coastal missions began recruiting converts from further inland, and a large portion of the Yokuts population was taken to various missions in San Jose, Santa Clara, Soledad, San Juan Bautista, and San Antonio. Many neophytes deserted and returned to their homes, but were sought and brought back by Spanish soldiers.

A decade after the Mexican government claimed independence from Spain in 1822, the missions were converted into parish churches, and many Native Americans were released and returned to their former territory, though not necessarily to the specific location from which they came.

After the American conquest of California in 1846, the remaining Northern Valley Yokuts were driven off their land by miners heading south, farmers pursuing the locally rich soil, and the construction of various railroads. By the time scholars were interested in gathering information on California native groups, there were few people left to provide descriptions of native life before European contact.

Historic Background

The history of the southern San Joaquin Valley can be divided into several periods of influence; pertinent historic periods are briefly summarized below.

Spanish Period

In 1772, Captain Pedro Fages, a Spanish soldier, entered the San Joaquin Valley area searching for military deserters. His diary was one among many that documented the environmental landscape and the cultural setting of the San Joaquin Valley. Fages entered the area from the south, and as he emerged from the lower portion of Tejon Pass, he saw the beautiful lakes, rivers, and plains and named the most prominent lake Buena Vista (beautiful view). In 1776, Padre Francisco Garces, traveled through the San Joaquin Valley in hopes of discovering a more direct route to Monterey.

The most drastic and permanent change to the local Northern Valley Yokuts way of life was the establishment of the Spanish Mission system. By the early 1800s, the mission fathers began a process of cultural change that brought the majority of the local Native Americans into the missions. At the expense of traditional skills, the Native Americans were taught the pastoral and horticultural skills of the Hispanic tradition. Spanish missionaries traveled into the San Joaquin Valley to recapture escaped neophytes and recruit inland Native Americans for the coastal missions. In 1834, the Mission system was officially secularized, and the majority of the mission Native American population dispersed to local ranches, villages, or nearby pueblos. Following the collapse of the mission system, many of the local Native Americans returned to the San Joaquin Valley, bringing with them language and agricultural practices learned from the Spanish. During the second half of the 19th century, the size of all Yokuts populations dwindled dramatically, due to the spread of European settlements and the diseases the Europeans brought with them.

Mexican Period

With the declaration of Mexican independence in 1821, Spanish control of Alta California ended, although little change actually occurred. Political change did not take place until mission secularization in 1834, when Native Americans were released from missionary control and the mission lands were granted to private individuals. Mission secularization removed the social protection and support on which Native Americans had come to rely and exposed them to further exploitation by outside interests, often forcing them into a marginal existence as laborers for large ranchos. Following mission secularization, the Mexican population grew as the Native American population continued to decline. Euro-American settlers began to arrive in California during this period and often married into Mexican families, becoming Mexican citizens, which made them eligible to receive land grants.

European Expansion

In 1826, Jedediah Smith was among the first trappers to explore the San Joaquin Valley, but other fur-trapping expeditions soon followed. In 1848, as a result of the Treaty of Guadalupe Hidalgo, California became a United States territory. Also in 1848, John Marshall found gold at Sutter's Mill, which marked the start of the Gold Rush. The influx of miners and entrepreneurs increased the population of California, not including Native Californians, from 14,000 to 224,000 in just four years. This, in turn, stimulated commercial growth in the San Joaquin Valley as eager entrepreneurs set up business to support the miners and mining operations. When the Gold Rush was over, many of the miners settled in the San Joaquin Valley and established farms, ranches, and lumber mills.

History of the City of Manteca

The City of Manteca was first settled in the mid-1800s by a small number of pioneer farmers who realized the area had an excellent combination of good soils, a mild climate, and readily available water which that were key to prosperous farming. Although Manteca was not in the heart of the gold country at the time of the Gold Rush, gold miners looking for a place to settle moved into the area to buy large and small tracts of land where they grew grain crops and raised cattle. During the 1860s,

Manteca was called Cowell Station, named after Joshua Cowell who was later known as the "father of Manteca." Cowell arrived in Manteca in 1861 and bought land in what is now the center of town, at the corner of Yosemite and Main streets. At one time, Cowell owned most of Manteca and in 1918 when the town was incorporated, Cowell was elected its first mayor.

In 1873, the Central Pacific Railroad was constructed with a track laid through the center of the Cowell Farm. The original train station was a boxcar with the name Cowell Station displayed on its side. Because there was another Cowell Station south of the town of Tracy named after Wright Cowell, Joshua Cowell's brother, the railroad and the local farmers agreed to a name change. It was decided that the new name would be Monteca. The citizens of the town were justifiably dismayed when the first railroad tickets had misspelled the name "Manteca" (Spanish for "lard") instead of Monteca. The local citizens were unhappy with the error, but it was never changed.

The City of Manteca began to grow as more farmers moved into the area and Manteca's first school was built in 1857. In 1913, the school was destroyed by fire, and it was not until 1923 that a new high school building was dedicated, which remained a city landmark until it was demolished in 1969. The East Union Cemetery in Manteca was first built in 1872 and today is one of the oldest landmarks in San Joaquin County.

In 1902, J. J. Overshiner built the first general store and barbershop in Manteca. However, the City of Manteca remained a small town; even in 1910, there were only a few homes with a population of about 100 people. Shortly after the opening of the first store in 1902, the local citizens petitioned for a post office.

Cost-effective, reliable irrigation for agricultural crops and livestock was essential for the development of the general Manteca area. In 1909, an election was held to form the South San Joaquin Irrigation District (SSJID) and to authorize bonds to provide funds for constructing the SSJID. Although it was generally believed that irrigation would help the small community to grow, the bonds were not issued until 1913. Irrigation water was diverted from the Stanislaus River at a point about 36 miles northeast of Manteca. SSJID built lateral ditches in preparation of delivering water to every 40-acre tract of land that marked the beginning of the town's growth. SSJID includes the cities of Escalon, Ripon, and Manteca, encompasses approximately 72,000 acres, and secures water from the Stanislaus River. The 1915 USGS Lathrop 7.5-minute topographic map shows that Walthall Slough, which traverses the southern project boundary, was present at that time.

Development of an industrial hub in Manteca began with the establishment in 1914 of the Manteca Canning Company, which was one of the major components of Manteca's industrial sector until it closed in 1964. The Spreckles Sugar Company plant opened in the downtown commercial area in 1918 to process sugar beets. The plant included office buildings, a clubhouse, landscaped grounds, and housing for its permanent employees. The downtown commercial district began to expand and soon included five restaurants, three hotels, grocery stores, drug stores, a movie theater, and various

stores and shops. The Kraft Foods Company opened a cheese plant in the commercial district in 1935 and substantially expanded it in 1937. It ceased operations in 1957.

Changes to the City of Manteca came slowly up through the 1970s, but today it is has become a favored area for high-tech industries, partly because of its affordable housing and small-town amenities. During the past 10 years, Manteca has experienced phenomenal growth, with its population now over 64,000 residents.

3.5.3 - Regulatory Framework

Federal

National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA), as amended, established the National Register of Historic Places (NRHP), which contains an inventory of the nation's significant prehistoric and historic properties. Under 36 CFR 60, a property is recommended for possible inclusion on the NRHP if it is at least 50 years old, has integrity, and meets one of the following criteria:

- It is associated with significant events in history, or broad patterns of events.
- It is associated with significant people in the past.
- It embodies the distinctive characteristics of an architectural type, period, or method of construction; or it is the work of a master or possesses high artistic value; or it represents a significant and distinguishable entity whose components may lack individual distinction.
- It has yielded, or may yield, information important in history or prehistory.

Certain types of properties are usually excluded from consideration for listing in the NRHP, but they can be considered if they meet special requirements in addition to meeting the criteria listed above. Such properties include religious sites, relocated properties, graves and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

State

California Register of Historical Resources

As defined by Section 15064.5(a)(3)(A-D) of the CEQA Guidelines, a resource shall be considered historically significant if the resource meets the criteria for listing on the California Register of Historical Resources (CR). The California Register of Historical Resources and many local preservation ordinances have employed the criteria for eligibility to the NRHP as a model, since the NHPA provides the highest standard for evaluating the significance of historic resources. A resource that meets the NRHP criteria is clearly significant. In addition, a resource that does not meet the NRHP standards may still be considered historically significant at a local or state level.

California Environmental Quality Act

The CEQA Guidelines state that a resource need not be listed on any register to be found historically significant. The CEQA guidelines direct lead agencies to evaluate archaeological sites to determine if they meet the criteria for listing in the California Register. If an archaeological site is a historical resource, in that it is listed or eligible for listing in the California Register, potential adverse impacts to it must be considered. If an archaeological site is considered not to be an historical resource but meets the definition of a "unique archeological resource" as defined in Public Resources Code Section 21083.2, then it would be treated in accordance with the provisions of that section.

Local

City of Manteca General Plan

The General Plan established the following goals and policies related to cultural resources that are applicable to the proposed project:

- **Goal RC-11:** Preserve and enhance Manteca's archaeological and historic resources for their aesthetic, educational and cultural values.
- **Goal RC-12:** Protect Manteca's Native American heritage.
- **Policy RC-P-37:** The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without consulting the California Archaeological Inventory at Stanislaus State University, conducting a site evaluation as may be indicated, and attempting to mitigate any adverse impacts according to the recommendation of a qualified archeologist. City implementation of this policy shall be guided by the California Environmental Quality Act (CEQA) and the National Historic Preservation Act (NHPA).
- **Policy RC-P-38:** The City shall require that the proponent of any development proposal in an area with potential archaeological resources, and specifically near the San Joaquin River and Walthall Slough, and on the east side of State Highway 99 at the Louise Avenue crossing, shall consult with the California Archaeological Inventory, Stanislaus State University to determine the potential for discovery of cultural resources, conduct a site evaluation as may be indicated, and mitigate any adverse impacts according to the recommendation of a qualified archaeologist. The survey and mitigation shall be developer funded.
- **Policy RC-P-39:** The City shall set as a priority the protection and enhancement of Manteca's historically and architecturally significant buildings.
- **Policy RC-P-40:** The City shall work with property owners seeking registration of historical structures as Historic Landmarks or listing on the Register of Historic Sites.
- **Policy RC-P-41:** The City shall prepare and adopt a Historical Preservation Ordinance.
- **Policy RC-P-42:** The City and Redevelopment Agency shall support the efforts of property owners to preserve and renovate historic and architecturally significant structures. Where such buildings cannot be preserved intact, the City shall seek to preserve the building facades.

3.5.4 - Methodology

This section is based on the information contained in the Archaeological Resources Assessment for Feasibility Study 2005 (included in this EIR as Appendix E), and record searches and a field survey conducted by Michael Brandman Associates in August 2010. Below is a summary of the investigations.

Record Searches

Central California Information Center (CCIC) Record Search

On August 3, 2010, staff at the CCIC conducted a records search (CCIC File 7756 L) to identify previously recorded historic resources within the project area and a 0.25-mile radius. The search included current inventories of the National Register of Historic Places (NRHP), the California Register of Historic Resources (CR), the California Historical Landmarks (CHL), the California Points of Historical Interest (CPHI), and the California State Historic Resources Inventory (HRI).

The results of the records search indicated that five previous investigations have been conducted within the project area (SJ-786, SJ-1900, SJ-4786, SJ-4901, and SJ-6122) and seven have been conducted within a 0.25-mile radius (SJ-729, SJ-3247, SJ-3611, SJ-64475, SJ-6643, SJ-6723, and SJ-6724).

No prehistoric or historic resources have been previously recorded within the project area or within a 0.25-mile radius of the project area.

Native American Heritage Commission Record Search

On August 18, 2010, MBA sent a letter to the Native American Heritage Commission (NAHC) in an effort to determine whether any sacred sites are listed on its Sacred Lands File for the project area. The response from the NAHC was received on August 19, 2010. The record search failed to indicate the presence of Native American cultural resources in the immediate project area. The name of one Native American representative, Katherine Perez, who may have additional information about the project site, was received with the results. On August 27, 2010, a letter was sent via email to Ms. Perez requesting further information about the project area. As of this date, no response has been received.

Tribal Consultation

Senate Bill 18 (SB 18) established tribal consultation requirements for projects that involve General Plan and Specific Plan amendments. The intent of SB 18 is to provide all tribes, whether federally recognized or not, an opportunity to consult with local governments for the purpose of preserving and protecting their sacred places. The legislation obligates the lead agency to facilitate the consultation. Since the proposed project involves a General Plan Amendment, the City is required to comply with SB 18.

Pedestrian Survey

The proposed project area was previously surveyed Basin Research in May of 2005. Basin Research prepared an assessment report, Archaeological Resources Assessment for Feasibility Study, detailing the findings of their field survey, record searches, and historic map review in 2005.

Because a field survey was previously conducted for the project area, MBA's Senior Project Archaeologist conducted a focused field survey on August 9, 2010, to determine if the previous survey was comprehensive and to see if any of the findings had changed in 5 years. The 2010 field survey indicted that the all of the major features such as the levee, the levee road, Walthall Slough, irrigation ditches and canals, and orchards and row crops remained unchanged since the original survey in 2005.

In addition, although access to the property at 2368 E. Woodward Avenue was denied, a visual assessment of the buildings and structures indicted that few, if any, changes had occurred to the structures in the 5 years since the 2005 survey. Following are abbreviated descriptions (for full descriptions see Appendix E, Archaeological Resources Assessment for Feasibility Study) of the five buildings and structures taken from the 2005 report and visually verified in the 2010 survey:

- Building A – Hay Storage. A large open structure approximately 130 feet long by 60 feet wide on the east side of the building cluster. The building has a low-pitch, corrugated aluminum gable roof supported by 20 painted wood posts that are approximately 30 feet high.
- Building B – Garage/Sheds. This structure is composed of four conjoining corrugated metal buildings. The buildings vary in size, but all seem to be used for storage or as garages.
- Building C – Prefabricated House (possible doublewide trailer). Residence with vertical wood siding, a low-pitch, asphalt shingle gable roof with a small entry porch and eight aluminum windows.
- Building D – Large Corrugated Metal Building (warehouse?). Measuring approximately 70 feet by 40 feet, this structure has a gable roof and wood framing and is open at the north and south ends.
- Building E – Residence. An abandoned wood building, possibly used for agricultural worker housing. This four-room building measures 80 feet by 18.5 feet and is elevated approximately 2 feet off the ground on wood supports.

The 2005 report notes that the "Southwest Manteca Area Specific Plan places three buildings built prior to 1952 in the eastern portion of the project area and another structure dating prior to 1952 as south of the existing levee. The three buildings are part of the complex present at 2368 E. Woodward Avenue appear to be still present while the building south of the levee is no longer extant." The 2005 report conclusions state that "Even though three of the buildings were identified as constructed before

1952, none of the five structures appear to satisfy California Register of Historical Resources (CRHR) criteria 1-4, either individually or as a group."

Because the current resident did not want to allow access to the property, close inspection of the buildings and structures within the complex was not possible; however, there seemed to be very little change to buildings since the 2005 report. All of the buildings and structures appeared to match the 2005 descriptions, and there were no noticeable changes such as new additions or major improvements.

Therefore, because the buildings have not changed in the last 5 years, the 2005 conclusion that they do not meet any of the four criteria for listing on the CRHR remains the same; none of the five structures appears to satisfy CRHR criteria 1 through 4, either individually or as a group. In addition, none of the buildings or structures appears to meet the criteria for local listings or landmarks.

Although access to the buildings was denied, the descriptions from the 2005 report were utilized to complete a DPR Primary form for the five structures, which is included in Appendix E.

During the course of the pedestrian survey, no historic or prehistoric resources eligible for listing on the NRHP or the CR were discovered.

3.5.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, cultural resources impacts resulting from the implementation of the proposed project would be considered significant if the project would:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

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

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

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

3.5.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Historical Resources

Impact CUL-1: The proposed project may cause a substantial adverse change in the significance of a historical resource.

Impact Analysis

According to the record search results received from the CCIC, no historic resources have been previously recorded within the project area or a 0.25-mile radius. In addition, during the course of the pedestrian survey, no historic resources were discovered within the project area. However, there is always the possibility that ground-disturbing activities during project development could potentially impact previously unknown historic resources. As such, Mitigation Measure CUL-1 requires standard inadvertent discovery procedures to be implemented in the event that subsurface historical resources are encountered during construction. With the implementation of mitigation, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-1 If potentially significant historic resources are encountered during subsurface excavation activities for the project area, all construction activities within a 100-foot radius of the resource shall cease until a qualified archaeologist determines whether the resource requires further study. The City shall require that the applicant include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction shall be recorded on appropriate California Department of Parks and Recreation forms and evaluated for significance in terms of California Environmental Quality Act criteria by a qualified archaeologist. Potentially significant cultural resources consist of but are not limited to stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites. If the resource is determined to be significant under CEQA, the City and a qualified archaeologist shall determine whether preservation in place is feasible. Such preservation in place is the preferred mitigation. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan for the resource. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the appropriate information center (California Historical Resources Information System), and provide for the permanent curation of the recovered materials.

Level of Significance After Mitigation

Less than significant impact.

Archaeological Resources

Impact CUL-2: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered archaeological resources.

Impact Analysis

This impact will evaluate the potential for the proposed project to adversely affect archaeological resources. The results of the CCIC record search indicate that no archaeological resources have been previously recorded within the project area or within a 0.25-mile radius of the project area. In addition, no archaeological resources were discovered during the pedestrian field survey. The results of the NAHC record search failed to indicate the presence of Native American cultural resources in the immediate vicinity of the project area. Additionally, the project area has been highly disturbed by row crop agriculture and other development and is considered to have a low sensitivity for archaeological resources.

However, there is always the possibility that ground-disturbing activities during project development could potentially impact previously unknown prehistoric or historic archaeological resources. Prehistoric resources can include flaked-stone tools (such as projectile points, knives, and choppers) or obsidian, chert, or quartzite toolmaking debris; culturally darkened soil (such as midden soil containing heat-affected rock, ash, and charcoal, shellfish remains, and animal bones); and stone milling equipment (such as mortars, pestles, grinding slicks). Historical materials can include wood, stone, foundations, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, and other refuse. As such, Mitigation Measure CUL-2 requires standard inadvertent discovery procedures to be implemented in the event that subsurface archaeological resources are encountered during construction. With the implementation of mitigation, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-2 If potentially significant archaeological resources are encountered during subsurface excavation activities, all construction activities within a 100-foot radius of the resource shall cease until a qualified archaeologist determines whether the resource requires further study. The City shall require that the applicant include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance in terms of California Environmental Quality Act criteria by a qualified archaeologist. Potentially significant cultural resources consist of but are not limited to stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites. If the resource is determined to be significant under CEQA, the City and a qualified archaeologist shall determine

whether preservation in place is feasible. Such preservation in place is the preferred mitigation. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan for the resource. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the appropriate information center (California Historical Resources Information System), and provide for the permanent curation of the recovered materials.

Level of Significance After Mitigation

Less than significant impact.

Paleontological Resources

Impact CUL-3: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered paleontological resources.

Impact Analysis

This impact will evaluate the potential for the proposed project to adversely affect paleontological resources. Although a record search for paleontological resources was not conducted for this project, impacts to significant paleontological resources in undisturbed surface or subsurface Pleistocene sediments are considered nominal, due to the floodplain conditions associated with the project area. In addition, no paleontological resources were discovered during the course of the field survey. Nonetheless, the possibility exists that subsurface construction activities may encounter previously undiscovered paleontological resources. Therefore, this would be a potentially significant impact.

As such, Mitigation Measure CUL-3 requires standard inadvertent discovery procedures to be implemented in the event that subsurface paleontological resources are encountered during construction. With the implementation of mitigation, impacts would be reduced to a level of less than significant

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-3 In the event that plant or animal fossils are discovered during subsurface excavation activities for the proposed project, all excavation within 50 feet of the fossil shall cease until a qualified paleontologist has determined the significance of the find and provides recommendations in accordance with Society of Vertebrate Paleontology standards. The paleontologist shall notify the City of Manteca to determine procedures to be followed before construction is allowed to resume at the location of the find. If the find is determined to be significant and the City determines that avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with the Society of Vertebrate Paleontology standards. The

plan shall be submitted to the City for review and approval. Upon approval, the plan shall be incorporated into the project.

Level of Significance After Mitigation

Less than significant impact.

Human Remains

Impact CUL-4:	**Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered human remains.**

Impact Analysis

This impact will evaluate the potential for the proposed project to adversely damage or destroy human remains. There are no known burial sites within the project area. The pedestrian survey did not find any evidence of human remains or burial goods within the project area. In addition, none of the previous surveys that included the project area or were within a 0.25-mile radius of the project area reported finding any human remains. Nonetheless, the possibility exists that subsurface construction activities may encounter previously undiscovered human remains. Accordingly, this is a potentially significant impact.

As such, Mitigation Measure CUL-4 requires standard inadvertent discovery procedures to be implemented in the event that human remains are encountered during construction. With the implementation of mitigation, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-4 If previously unknown human remains are encountered during construction activities, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed:

In the event of an accidental discovery or recognition of any human remains, Public Resource Code Section 5097.98 must be followed. Once project-related ground disturbance begins and if there is accidental discovery of human remains, the following steps shall be taken:

- There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the San Joaquin County Coroner's Office is contacted to determine if the remains are Native American and if an investigation into cause of death is required. If the coroner determines the remains are Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the most likely descendant (MDL) of the deceased Native

American. The MDL may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

Level of Significance After Mitigation

Less than significant impact.

3.6 - Geology, Soils, and Seismicity

3.6.1 - Introduction

This section describes the existing geology, soils, and seismicity setting and potential effects from project implementation on the Preliminary Geotechnical Investigation, dated May 2007, prepared by Terrasearch, Inc., and included in this EIR as Appendix F, Preliminary Geotechnical Investigation.

3.6.2 - Environmental Setting

Regional Geology

The City of Manteca is located in the northern San Joaquin Valley. The San Joaquin Valley is the southern section of the Great Central Valley of California; the Sacramento Valley is the northern section. The Great Central Valley is a sedimentary basin, with the Coast Range to the west and the Sierra Nevada to the east. Almost all of the sediments that fill the Great Central Valley eroded from the Sierra Nevada. The oldest of these sediments are full of fragments of volcanic rocks eroded from ancient volcanoes. As erosion stripped the cover of volcanic rocks from the granites of the Sierra Nevada, their detritus of pale quartz and feldspar sand began to wash into the Great Central Valley.

Drainage into the San Joaquin Valley is mainly from the Sierra Nevada Mountains. The sediments on the valley floor were deposited within the past 1 to 2 million years, some within the past few thousand years.

Regional Seismicity

The term seismicity describes the effects of seismic waves that are radiated from an earthquake as it ruptures. While most of the energy released during an earthquake results in the permanent displacement of the ground, as much as 10 percent of the energy may dissipate immediately in the form of seismic waves. The probability of one or more earthquakes of magnitude 6.7 (Richter scale) or higher occurring in the project area has been evaluated by the United States Geological Survey (USGS). Based on the results of the USGS evaluation, there is a 62-percent likelihood that such an earthquake event will occur in the Bay Area between 2003 and 2032. The faults with the greater probability of movement with a magnitude of 6.7 or higher earthquake are the Hayward Fault at 27 percent, the San Andreas Fault at 21 percent, and the Calaveras Fault at 11 percent. To understand the implications of seismic events, a discussion of faulting and seismic hazards is provided below.

Faulting

Faults form in rocks when stresses overcome the internal strength of the rock, resulting in a fracture. Large faults develop in response to large, regional stresses operating over a long time, such as those stresses caused by the relative displacement between tectonic plates. According to the elastic rebound theory, these stresses cause strain to build up in the earth's crust until enough strain has built up to exceed the strength along a fault and cause a brittle failure. The slip between the two stuck plates or coherent blocks generates an earthquake. Following an earthquake, strain will build once again until the occurrence of another earthquake. The magnitude of slip is related to the maximum allowable

strain that can be built up along a particular fault segment. The greatest buildup in strain that is due to the largest relative motion between tectonic plates or fault blocks over the longest period of time will generally produce the largest earthquakes. The distribution of these earthquakes is a study of much interest for both hazard prediction and the study of active deformation of the earth's crust. Deformation is a complex process, and strain caused by tectonic forces is not only accommodated through faulting but also by folding, uplift, and subsidence, which can be gradual or in direct response to earthquakes.

Faults are mapped to determine earthquake hazards, since they occur where earthquakes tend to recur. A historic plane of weakness is more likely to fail under stress and strain than a previously unbroken block of crust. Faults are, therefore, a prime indicator of past seismic activity, and faults with recent activity are presumed to be the best candidates for future earthquakes. However, since slip is not always accommodated by faults that intersect the surface along traces, and since the orientation of stresses and strain in the crust can shift, predicting the location of future earthquakes is complicated. Earthquakes sometimes occur in areas with previously undetected faults or along faults previously thought inactive.

The northern San Joaquin Valley has generally not been seismically active in the last 10,000 years. Most faults in the project region with known or estimated activity during the Holocene epoch are generally located in the Bay Area, approximately 40 miles to the west, and lie within the Coast Ranges geomorphic province. Active faults nearest to Manteca are summarized in Table 3.6-1.

Table 3.6-1: Fault Summary

Fault	Fault Classification	Direction	Distance From Project Site (miles)	Maximum Credible Earthquake (magnitude)
Great Valley	Active	Southwest	22	6.7
Greenville/Marsh Creek/Clayton	Active	West	37	6.9
Ortigalita	Active	South	45	6.9
Calaveras	Active	West	59	6.8
Hayward	Active	West	62	7.1
Concord	Active	Northwest	56	6.9
Green Valley	Active	Northwest	62	6.9
San Andreas	Active	West	70	7.9
Source: California Geological Survey, City of Manteca, County of San Joaquin.				

Seismic Hazards

Seismicity describes the effects of seismic waves that are radiated from an earthquake as it ruptures. While most of the energy released during an earthquake results in the permanent displacement of the

ground, as much as 10 percent of the energy may dissipate immediately in the form of seismic waves. To understand the implications of seismic events, a discussion of faulting and seismic hazards is provided below.

Seismic hazards pose a substantial danger to property and human safety and are present because of the risk of naturally occurring geologic events and processes impacting human development. Therefore, the hazard is influenced as much by the conditions of human development as by the frequency and distribution of major geologic events. Seismic hazards present in California include ground rupture along faults, strong seismic shaking, liquefaction, ground failure, landsliding, and slope failure.

Fault Rupture

Fault rupture is a seismic hazard that affects structures sited above an active fault. The hazard from fault rupture is the movement of the ground surface along a fault during an earthquake. Typically, this movement takes place during the short time of an earthquake, but it also can occur slowly over many years in a process known as creep. Most structures and underground utilities cannot accommodate the surface displacements of several inches to several feet commonly associated with fault rupture or creep.

Ground Shaking

The severity of ground shaking depends on several variables such as earthquake magnitude, epicenter distance, local geology, thickness, seismic wave-propagation properties of unconsolidated materials, groundwater conditions, and topographic setting. Ground shaking hazards are most pronounced in areas near faults or with unconsolidated alluvium.

Based on observations of damage from recent earthquakes in California (San Fernando 1971, Whittier-Narrows 1987, Landers 1992, Northridge 1994), ground shaking is responsible for 70 to 100 percent of all earthquake damage. The most common type of damage from ground shaking is structural damage to buildings, which can range from cosmetic stucco cracks to total collapse. The overall level of structural damage from a nearby large earthquake would likely be moderate to heavy, depending on the characteristics of the earthquake, the type of ground, and the condition of the building. Besides damage to buildings, strong ground shaking can cause severe damage from falling objects or broken utility lines. Fire and explosions are also hazards associated with strong ground shaking.

While Richter magnitude provides a useful measure of comparison between earthquakes, the moment magnitude is more widely used for scientific comparison since it accounts for the actual slip that generated the earthquake. Actual damage is due to the propagation of seismic or ground waves as a result of initial failure, and the intensity of shaking is as much related to earthquake magnitude as is the condition of underlying materials. Loose materials tend to amplify ground waves, while hard rock can quickly attenuate them, causing little damage to overlying structures. For this reason, the

Modified Mercalli Intensity (MMI) Scale provides a useful qualitative assessment of ground shaking. The MMI Scale is a 12-point scale of earthquake intensity based on local effects experienced by people, structures, and earth materials. Each succeeding step on the scale describes a progressively greater amount of damage at a given point of observation. The MMI Scale is shown in Table 3.6-2, along with relative ground velocity and acceleration.

Table 3.6-2: Modified Mercalli Intensity Scale

Richter Magnitude	Modified Mercalli Intensity	Effects	Average Peak Ground Velocity (centimeters/seconds)	Average Peak Acceleration
0.1–0.9	I	Not felt. Marginal and long-period effects of large earthquakes	—	—
1.0–2.9	II	Felt by only a few persons at rest, especially on upper floors of building. Delicately suspended objects may swing.	—	—
3.0–3.9	III	Felt quite noticeable in doors, especially on upper floors of building, but many people do not recognize it as an earthquake. Standing cars may rock slightly. Vibration like passing a truck. Duration estimated.	—	0.0035–0.007 g
4.0–4.5	IV	During the day, felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make creaking sound. Sensations like heavy truck striking building. Standing cars rocked noticeably.	1–3	0.015–0.035 g
4.6–4.9	V	Felt by nearly everyone, many awakened. Some dishes, windows, broken; cracked plaster in a few places; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.	3–7	0.035–0.07 g
5.0–5.5	VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of falling plaster and damaged chimneys. Damage slight.	7–20	0.07–0.15 g
5.6–6.4	VII	Everyone runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well built, ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving cars.	20–60	0.15–0.35 g

Table 3.6-2 (cont.): Modified Mercalli Intensity Scale

Richter Magnitude	Modified Mercalli Intensity	Effects	Average Peak Ground Velocity (centimeters/seconds)	Average Peak Acceleration
6.5–6.9	VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monument walls, and heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving in cars disturbed.	60–200	0.35–0.7 g
7.0–7.4	IX	Damage considerable in specially designed structures; well-designed frame strictures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	200–500	0.7–1.2 g
7.5–7.9	X	Some well-built structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Railway lines bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed, slopped over banks.	≥ 500	>1.2 g
8.0–8.4	XI	Few, if any masonry structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.		
≥ 8.5	XII	Total damage. Waves seen on ground. Lines of sight and level distorted. Objects thrown into the air.		

Source: United States Geologic Survey.

Ground Failure

Ground failure includes liquefaction and the liquefaction-induced phenomena of lateral spreading, and lurching.

Liquefaction is a process by which sediments below the water table temporarily lose strength during an earthquake and behave as a viscous liquid rather than a solid. Liquefaction is restricted to certain

geologic and hydrologic environments, primarily recently deposited sand and silt in areas with high groundwater levels. The process of liquefaction involves seismic waves passing through saturated granular layers, distorting the granular structure, and causing the particles to collapse. This causes the granular layer to behave temporarily as a viscous liquid, resulting in liquefaction.

Liquefaction can cause the soil beneath a structure to lose strength, which may result in the loss of foundation-bearing capacity. This loss of strength commonly causes the structure to settle or tip. Loss of bearing strength can also cause light buildings with basements, buried tanks, and foundation piles to rise buoyantly through the liquefied soil.

Lateral spreading is lateral ground movement, with some vertical component, caused by liquefaction. In effect, the soil rides on top of the liquefied layer. Lateral spreading can occur on relatively flat sites with slopes less than 2 percent, under certain circumstances, and can cause ground cracking and settlement.

Lurching is the movement of the ground surface toward an open face when the soil liquefies. An open face could be a graded slope, stream bank, canal face, gully, or other similar feature.

Landslides and Slope Failure

Landslides and other forms of slope failure form in response to the long-term geologic cycle of uplift, mass wasting, and disturbance of slopes. Mass wasting refers to a variety of erosional processes from gradual downhill soil creep to mudslides, debris flows, landslides and rock fall—processes that are commonly triggered by intense precipitation, which varies according to climactic shifts. Often, various forms of mass wasting are grouped together as landslides, which are generally used to describe the downhill movement of rock and soil.

Geologists classify landslides into several different types that reflect differences in the type of material and type of movement. The four most common types of landslides are translational, rotational, earth flow, and rock fall. Debris flows are another common type of landslide similar to earth flows, except that the soil and rock particles are coarser. Mudslide is a term that appears in non-technical literature to describe a variety of shallow, rapidly moving earth flows.

Soils

The United States Department of Agriculture Natural Resources Conservation Service indicates that majority of the project site is underlain by Columbia, Delhi, Dello, Guard, Merritt, and Tinnin. The soil properties are summarized in Table 3.6-3.

Table 3.6-3: Soil Properties Summary

Soil Name	Surface Texture	Source Material	Hydrologic Group	Drainage Class
Columbia	Fine sandy loam, 0–2% slopes	Alluvium derived from mixed rock sources	Group B-Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well-drained or well-drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.	Somewhat poorly drained.
Delhi	Loamy sand, 0–2% slopes	Wind-modified alluvium derived from granitic rock sources	Group A-High infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well-drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.	Somewhat excessively drained
Dello	Loamy sandy, 0–2% slopes	Alluvium derived from granitic rock sources	Group A-Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well-drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.	Very poorly drained
Guard	Clay loam, 0–2% slopes	Alluvium derived from mixed rock sources	Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.	Poorly drained
Merritt	Silty clay loam, 0–2% slopes	Alluvium derived from mixed rock sources	Group B-Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well-drained or well-drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.	Poorly drained

Table 3.6-3 (cont.): Soil Properties Summary

Soil Name	Surface Texture	Source Material	Hydrologic Group	Drainage Class
Tinnin	Loamy coarse sand, 0–2% slopes	Alluvium derived from granitic rock sources	Group A-Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well-drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.	Well-drained
Source: United States Department of Agriculture, Natural Resources Conservation Service, 2010.				

Subsurface Conditions

A field investigation was conducted at the project site. The field investigation consisted of drilling six exploratory borings carried to depths of 31.5 to 41.5 feet below the existing ground surface. In addition, four monitoring wells were installed to a maximum depth of 10 feet. The findings of these investigations are summarized below.

Project Site Conditions

The project site is underlain by loose to dense clayey sand, extending to the maximum depth of exploration ranging from of 31.5 to 41.5 feet. A 7-foot-thick, firm silty clay was encountered in one of the borings at about 9 feet below the existing ground surface. Based on the soil boring data, the soils at the project site consist of medium dense clayey sand, medium plasticity silty clay, firm silty clay, dense sand, very stiff silty clay, very dense coarse grained sand, and loose sand.

A previous report by Kleinfelder, Inc. was reviewed as part of the preliminary geotechnical investigation by Terrasearch, Inc. to evaluate existing conditions at the levee. Kleinfelder, Inc. performed five soil borings in 1989 to maximum depths ranging from 30 to 40 feet below the top of the levee along the Walthall Slough bordering the site. According to the soil samples, the levee and foundation consisted of loose to medium dense fine-grained, silty sand to maximum depths of exploration.

Groundwater

Groundwater was not encountered during drilling within the depths explored, due to the rotary wash drilling method. However, free water was encountered in one of the monitoring wells at about 8 feet below the existing ground surface. Groundwater was also encountered during the Phase II environmental site assessment. The depth to groundwater varies between 6 feet to 18 feet. A review of the Spring 2010 Groundwater Report for the San Joaquin County Flood Control and Water Conservation District indicates that groundwater in the area could be at a depth of approximately 10 to 17 feet below ground surface. Groundwater was encountered at about 13 to 18 feet below the top of the levee.

Liquefaction

A detailed analysis of earthquake-induced liquefaction for the project site was completed. Soils most susceptible to liquefaction are loose, clean, saturated, and uniformly graded fine- to medium-grained sands. In addition, loose silty sands, non-plastic silts, and in some cases, low plasticity clayey sands may also experience liquefaction during strong ground shaking. In general, liquefaction can result in settlement of the layer; sand boil formation; lateral spreading; buoyancy of below-grade facilities; and bearing failures or reduced foundation support.

The data used for evaluating liquefaction potential of the subsurface soils consisted of the penetration resistance, the soil classification, the relative density of materials, and the groundwater level. The subsurface investigation indicated that loose to medium dense sands of varying fines content exists as a layer of up to 25 feet thick. Volumetric strain of liquefiable and non-liquefiable sandy soils was estimated using Ishihara and Yoshimine empirical method based on the performance of liquefied sites in previous earthquakes. A recent revised method was used to re-evaluate liquefaction-induced settlement and lateral spreading for the subject property.

Based on the evaluation results, it is estimated that that the loose to medium dense sandy soils at the site could experience some vertical strain. The silty clay layer that was encountered at Boring-1 was not considered to be potentially liquefiable according to the recent liquefaction criteria for fine materials. The estimated seismically induced area settlement of the site would range from approximately 1.0 to 1.5 inches. Since there is no non-liquefiable cap above the liquefiable layer, it is likely that sand boils may occur if the groundwater is high and during ground shaking. Minor ground damage in the form of cracks may appear in localized areas, particularly where differential settlements due to liquefaction occur.

Lateral spreading is a type of ground failure associated with the movement of an overlying surficial soil mass along a shear zone associated with liquefiable sediment. The magnitude of lateral spreading depends on any factors that include distance to free space, site geometry, earthquake magnitude, properties of the liquefiable layer and overlying layer, and the continuity/discontinuity of potentially liquefiable soil layers. Based on limited work and due to presence of the material with corrected blow count of 15 or higher at about 5 to 15 feet, and assuming the slough is less than 15 feet in depth from the adjacent ground surface, the potential for lateral spreading within the site from the Walthall Slough is judged to be low. However, once the layout of the structures is proposed structures is known, the estimated lateral displacement can be calculated.

3.6.3 - Regulatory Framework

Federal

Federal Earthquake Hazards Reduction Act

In 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program. The act established the National

Earthquake Hazards Reduction Program (NEHRP). The National Earthquake Hazards Reduction Program Act (NEHRPA) significantly amended this program in 1990 by refining the description of the agency responsibilities, program goals, and objectives.

NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The NEHRPA designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Other NEHRPA agencies include the National Institute of Standards and Technology, National Science Foundation and the USGS.

State

California Building Standards Code

The California Building Standards Code establishes building requirements for construction and renovation. The most recent version of the California Building Standards Code was adopted in 2007 by the California Building Standards Commission and took effect January 1, 2008, and it is based on the International Code Council's Building and Fire Codes. Included in the California Building Standards Code are the Electrical Code, Mechanical Code, Plumbing Code, Energy Code, and Fire Code.

The State of California provides minimum standards for building design through the California Building Standards Code (California Code of Regulations, Title 24). Where no other building codes apply, Chapter 29 regulates excavation, foundations, and retaining walls. Finally, the 2007 California Building Standards Code regulates grading activities, including drainage and erosion control and construction on unstable soils, such as expansive soils and areas subject to liquefaction.

California Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act of 1990 (California Public Resources Code Section 1690-2699.6) addresses seismic hazards other than surface rupture, such as liquefaction and induced landslides. The Seismic Hazards Mapping Act specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

Alquist-Priolo Earthquake Fault Zoning Act

In response to the severe fault rupture damage of structures by the 1971 San Fernando earthquake, the State of California enacted the Alquist-Priolo Earthquake Fault Zoning Act in 1972. This act required the State Geologist to delineate Earthquake Fault Zones along known active faults that have a relatively high potential for ground rupture. Faults that are zoned under the Alquist-Priolo Act must

meet the strict definition of being "sufficiently active" and "well-defined" for inclusion as an Earthquake Fault Zones. The Earthquake Fault Zones are revised periodically, and they extend 200 to 500 feet on either side of identified fault traces. No structures for human occupancy may be built across an identified active fault trace. An area of 50 feet on either side of an active fault trace is assumed to be underlain by the fault, unless proven otherwise. Proposed construction in an Earthquake Fault Zone is permitted only following the completion of a fault location report prepared by a California Registered Geologist.

National Pollutant Discharge Elimination System Permit

In California, the State Water Resources Control Board (SWRCB) administers the federal Environmental Protection Agency's promulgated regulations (55 Code of Federal Regulations 47990) requiring the permitting of stormwater-generated pollution under the National Pollutant Discharge Eliminations System (NPDES). In turn, the SWRCB's jurisdiction is administered through Regional Water Quality Control Boards. Pursuant to these federal regulations, an operator must obtain a General Permit under the NPDES Stormwater Program for all construction activities with ground disturbance of one acre or greater. The General Permit requires the implementation of best management practices (BMPs) to reduce pollutant loads into the waters of the State and measures to reduce sediment and erosion control. In addition, a Stormwater Pollution Protection Plan (SWPPP) must be prepared. The SWPPP addresses water pollution control during construction. SWPPPs require that all stormwater discharges associated with construction activity, where clearing, grading, and excavating results in soil disturbances, must by law be free of site pollutants.

Local

City of Manteca

General Plan

The City of Manteca General Plan established the following goals and policies related to geology and soils that are applicable to the proposed project:

- **Goal S-1:** Prevent loss of lives, injury, and property damage due to geological hazards and seismic activity.
- **Goal S-2:** Prevent loss of lives, injury, and property damage due to the collapse of buildings and critical facilities, and to prevent disruption of essential services in the event of an earthquake.
- **Policy S-P-1:** The City shall require preparation of geological reports and/or geological engineering reports for proposed new development located in areas of potentially significant geological hazards, including potential subsidence (collapsible surface soils) due to groundwater extraction.
- **Policy S-P-2:** The City shall require new development to mitigate the potential impacts of geologic hazards through Building Plan review.

- **Policy S-P-3:** The City shall require new development to mitigate the potential impacts of seismic induced settlement of uncompacted fill and liquefaction (water-saturated soil) due to the presence of a high water table.
- **Goal RC-6:** Preserve and maintain Manteca's soils to avoid pollution of surface waters, decreased air quality, and loss of soil.
- **Policy RC-P-10:** Minimize soil erosion and loss of topsoil from land development activities, wind, and water flow.
- **Policy RC-P-11:** Minimize sedimentation and loss of topsoil from soil erosion.

The Safety Element of the City General Plan states that all new development shall comply with the current California Building Standards Code requirements and with California Health and Safety Code Section 19100, et seq. (Earthquake Protection Law). The Resource Conservation Element of the City General Plan states that all new development shall comply with the current California Building Standards Code requirements for construction standards for specific soil types and with California Building Standards Code Chapter 70 regulating grading activities including drainage and erosion control. The City requires site-specific land management and development practices for proposed development projects, including appropriate mitigation measures to avoid or reduce erosion.

General Permit

The City of Manteca regulates grading and construction through General Permits for construction activity that disturbs a land totaling 1 acre or more, or less than 1 acre but part of a larger common plan of development. In addition, the City requires all new development to comply with the requirements of the current version of the California Building Standards Code that stipulate building structural material and reinforcement.

3.6.4 - Methodology

Terrasearch inc. prepared a Preliminary Geotechnical Report, dated May 29, 2007 to provide preliminary geotechnical recommendations for the site development and initial building design. The report summarized the findings of a field investigation and laboratory testing. The field investigation consisted of site reconnaissance and the drilling of borings using a truck-mounted, 6-inch rotary wash method. Six borings were drilled within the proposed building footprints to a depth of 41.5 feet below ground surface to evaluate subsurface soil profile. In addition, four monitoring wells were installed.

Boring logs and laboratory testing results are provided in Appendix F.

3.6.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, geology, soils, and seismicity impacts resulting from the implementation of the proposed project would be considered significant if the project would:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:

   i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

   ii. Strong seismic ground shaking?

   iii. Seismic-related ground failure, including liquefaction?

   iv. Landslides?

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

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (Refer to Section 7, Effects Found Not To Be Significant.)

3.6.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Seismic Hazards

Impact GEO-1:	**Development of the proposed project may expose persons or structures to seismic hazards.**

Impact Analysis

This impact evaluates potential exposure of the proposed project to seismic hazards, including fault rupture, strong ground shaking, ground failure and liquefaction, and landslides.

Fault Rupture

There are no Alquist-Priolo Earthquake Fault Zones within the project site boundaries. In addition, the Preliminary Geotechnical Investigation indicated that there are no faults within the project site boundaries. This condition precludes the possibility of the proposed project being exposed to fault rupture. No impacts would occur.

Strong Ground Shaking

According to the USGS's Probabilistic Hazard Map, ground shaking in San Joaquin County is predicted to have a 10-percent probability that a seismic event would produce horizontal ground shaking of 10 to 25 percent within a 50-year period. Using a 10-percent probability of exceedance within 50 years, the maximum-horizontal ground acceleration was calculated for the site at 0.25g. This calculation considered all active earthquake fault zones within a 100-kilometer radius of the site and a return period of 475 years.

The proposed project area may be exposed to strong ground shaking during an earthquake in the general region. The proposed project would implement all applicable requirements of the most recent California Building Standards Code, which provides criteria for the seismic design of buildings. Seismic design criteria account for peak ground acceleration, soil profile, and other site conditions, and they establish corresponding design standards intended primarily to protect public safety and secondly to minimize property damage. Mitigation is proposed that would require the project applicant to submit site plans to City of Manteca for review and approval that demonstrate that proposed project's plans incorporate all applicable seismic design criteria of the most recent California Building Standards Code. Accordingly, potential ground shaking impacts would be reduced to a level of less than significant.

Ground Failure and Liquefaction

Liquefaction occurs when saturated soil loses shear strength and deforms as a result of increased pore water pressure induced by strong ground shaking during an earthquake. As the excess pore pressure dissipates, volume changes are produced within the liquefied soil layer that can manifest at the ground surface as settlement of structures, floating of buried structures, and failure of retaining walls. Soil types most susceptible to liquefaction are saturated, loose, sandy soils. The soils within the project area consist of medium dense clayey sand, medium plasticity silty clay, firm silty clay, dense sand, very stiff silty clay, very dense coarse-grained sand, and loose sand.

Based on the evaluation results, it is estimated that that the loose to medium dense sandy soils at the site could experience some vertical strain. The silty clay layer that was encountered at Boring-1 was not considered to be potentially liquefiable according to the recent liquefaction criteria for fine materials. The estimated seismically induced area settlement of the site would range from approximately 1.0 to 1.5 inches. Since there is no non-liquefiable cap above the liquefiable layer, it is likely that sand boils may occur if the groundwater is high and during ground shaking. Minor ground damage in the form of cracks may appear in localized areas, particularly where differential settlements due to liquefaction occur. Based on limited work and the presence of the material with corrected blow count of 15 or higher at about 5 to 15 feet, and assuming the slough is less than 15 feet in depth from the adjacent ground surface, the potential for lateral spreading within the site from the Walthall Slough is judged to be low. However, once the layout of the structures is known, the estimated lateral displacement can be calculated. This would be addressed in the design-level geotechnical study.

As discussed earlier, the proposed project would implement all applicable requirements of the most recent California Building Standards Code, which provides criteria for the seismic design of buildings. Seismic design criteria account for peak ground acceleration, soil profile, and other site conditions, and they establish corresponding design standards intended primarily to protect public safety and secondly to minimize property damage. Mitigation is proposed that would require the project applicant to submit site plans to City of Manteca for review and approval that demonstrate that proposed project's plans incorporate all applicable seismic design criteria of the most recent California Building Standards Code.

Landslides

There are no substantial slopes on or near the project site. This condition precludes the possibility of landslides inundating the project site. No impacts would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM GEO-1 Prior to issuance of building permits, the project applicant shall submit a design-level geotechnical study and building plans to the City of Manteca for review and approval. The building plans shall demonstrate that they incorporate all applicable recommendations of the design-level geotechnical study and comply with all applicable requirements of the most recent version of the California Building Standards Code. A licensed professional engineer shall prepare the plans, including those that pertain to soil engineering, structural foundations, pipeline excavation, and installation. The approved plans shall be incorporated into the proposed project. All onsite soil engineering activities shall be conducted under the supervision of a licensed Geotechnical Engineer or Certified Engineering Geologist.

Level of Significance After Mitigation

Less than significant impact.

Erosion

Impact GEO-2: Construction activities associated with the proposed project have the potential to create erosion and sedimentation.

Impact Analysis

This impact evaluates proposed project's potential to create erosion and sedimentation.

Construction activities associated with the proposed project would involve vegetation removal, grading, and excavation activities that could expose barren soils to sources of wind or water, resulting in the potential for erosion and sedimentation. NPDES stormwater permitting programs regulate stormwater quality from construction sites, which includes erosion and sedimentation. Under the NPDES permitting program, the preparation and implementation of an SWPPP is required for

construction activities that would disturb an area of 1 acre or more. The SWPPP must identify potential sources of erosion or sedimentation that may be reasonably expected to affect the quality of stormwater discharges as well as identify and implement Best Management Practices (BMPs) that ensure the reduction of these pollutants during stormwater discharges. Typical BMPs intended to control erosion include sand bags, detention basins, silt fencing, storm drain inlet protection, street sweeping, and monitoring of water bodies.

These requirements have been incorporated into the proposed project as mitigation. The implementation of an SWPPP and its associated BMPs would reduce potential erosion impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure HYD-1.

Level of Significance After Mitigation

Less than significant impact.

Unstable Geologic Units or Soils

Impact GEO-3:	**The proposed project would not expose persons or structures to hazards associated with unstable geologic units or soils.**

Impact Analysis

This impact evaluates the proposed project's potential to expose persons or structures to hazards associated with unstable geologic units or soils.

The Preliminary Geotechnical Report prepared by Terrasearch, Inc. concluded that the onsite soils are suitable to support the development of the proposed project. As previously discussed in Impact GEO-1, the project site's liquefaction and lateral spreading potential is low. However, once the layout of the structures is proposed structures is known, the estimated lateral displacement can be calculated. This would be addressed in the design-level geotechnical study.

As part of the proposed project, the project site would be graded, and the area underlying the building pad would be soil-engineered in accordance the recommendations of a design-level geotechnical study and the requirements of the California Building Standards Code. This requirement is established by Mitigation Measure GEO-1. This process would involve removal of unsuitable soils, the placement of engineered fill, and compaction in order to ensure that the proposed structure is adequately supported. These practices would ensure that the proposed project is located on stable soils and geologic units and that it would not be susceptible to settlement or ground failure. Therefore, the implementation of Mitigation Measure GEO-1 would reduce impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure GEO-1.

Level of Significance After Mitigation

Less than significant impact.

Expansive Soils

Impact GEO-4:	**Development of the proposed project would not expose persons or structures to hazards associated with expansive soils.**

Impact Analysis

This impact evaluates the proposed project's potential to expose persons or structures to hazards associated with expansive soils.

According to the Preliminary Geotechnical Report, the project site does not contain expansive soils. The United States Department of Agriculture Natural Resources Conservation Service indicates that Columbia, Delhi, Dello, Guard, Merritt, and Tinnin underline the project site. These soils have a have a very low shrink/swell potential and are not considered expansive. Therefore, the development of the project would not expose persons or structures to hazards associated with shrinking and swelling of expansive soils. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

3.7 - Hazards and Hazardous Materials

3.7.1 - Introduction

This section describes the existing hazards and hazardous materials setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on Phase I and Updated Phase II Environmental Site Assessments, dated May 2007, and Phase I and Limited Phase II Limited Environmental Site Assessment, dated April 2008, prepared by Terrasearch, Inc. and included in this EIR as Appendix G.

3.7.2 - Environmental Setting

Hazardous materials, as defined by the California Code of Regulations, are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed, or otherwise managed. Hazardous materials are grouped into the following four categories, based on their properties:

- Toxic – causes human health effects
- Ignitable – has the ability to burn
- Corrosive – causes severe burns or damage to materials
- Reactive – causes explosions or generates toxic gases

A hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. The criteria that define a material as hazardous also define a waste as hazardous. If improperly handled, hazardous materials and hazardous waste can result in public health hazards if they are released into the soil or groundwater or through airborne releases in vapors, fumes, or dust. Soil and groundwater having concentrations of hazardous constituents higher than specific regulatory levels must be handled and disposed of as hazardous waste when excavated or pumped from an aquifer. The California Code of Regulations, Title 22, Sections 66261.20-24 contain technical descriptions of toxic characteristics that could cause soil or groundwater to be classified as hazardous waste.

Phase I and Phase II Environmental Site Assessments

Phase I and Phase II Environmental Site Assessments (ESAs) were conducted by Terrasearch, Inc. on May 2007 and April 2008 for a majority of acreage within the project area. The Environmental Site Assessments revealed three specific areas of concern: (1) the potential for residual agriculturally related compounds in soils, (2) the potential for adverse impacts to soils adjacent to the aboveground storage tanks (ASTs), and (3) the potential for lead-based paint (LBP) in the existing structures. The purpose of the Environmental Site Assessments was to document recognized environmental conditions on the property related to current and historical uses of the area and to evaluate the potential for release of hazardous materials from onsite or offsite sources that could significantly affect environmental conditions at the subject property.

The Environmental Site Assessments performed by Terrasearch, Inc. encompasses the project site; record searches and reviews of historical aerial photography and topographical maps revealed that the project site area has undergone a few changes since 1957. The majority of the changes pertain to the agricultural activities and related uses on the site and include the addition of row crops, barns, residence, and orchards, over a period of 45 years.

The California Department of Toxic Substance Control's (DTSC's) EnviroStor database was queried about any information about the project site. The EnviroStor database is an online search and Geographic Information System tool for identifying sites that have known contamination or sites for which there may be reasons to investigate further. It also identifies facilities that are authorized to treat, store, dispose, or transfer hazardous waste. No records were found for the project site, and no secondary contamination source was reported within 1 mile of the site.

Site Visit

A representative from Terrasearch, Inc. visited the site on April 10, 2008. No underground storage tank (UST) was observed on the project site. According to the current property owner, a UST was removed from the project site approximately 15 to 20 years ago. However, no permits or soil samples were obtained during the UST removal process. Three portable empty aboveground storage tanks (ASTs) were observed, which appeared to be used for the transportation of fertilizers or diesel products. One partially exposed AST was also observed west of the pole barn. One abandoned fuel pump was located adjacent to the northwest corner of the storage barn. Based on visual observations, two 55-gallon drums filled with waste oil were observed immediately northeast of the warehouse. A few diesel- and waste-oil-stained soil locations were observed inside the barn/storage structures. In addition, a large amount of debris, including pesticide/insecticide/herbicide containers, motor oil, waste oil containers, batteries, tires, a burned car body, and other items were observed.

Records Search

Environmental Data Resources, Inc. (EDR) performed a search of federal, state, and local databases listing contaminated sites, brownfield sites (a development site having the presence or potential presence of hazardous substance, pollutant, or contaminant), UST sites, waste storage sites, toxic chemical sites, contaminated well sites, clandestine drug lab sites, and other sites containing hazardous materials. The project area was not found in any of the databases mentioned above. In addition, no adjacent properties within 1 mile were listed in any of those databases.

Public records for the project site were reviewed to identify hazardous materials storage or site contamination at the San Joaquin County Office of Emergency Services Hazardous Materials Program, Environmental Health Division of San Joaquin County (EHDSC), City of Manteca Fire Department, Lathrop-Manteca Fire Prevention District (LMFPD), Sacramento Office of Regional Water Quality Control Board, and San Joaquin County Department of Agriculture. No files were found for the project site. In addition, no mapped sites were found in ERD's search of available

("reasonable ascertainable") government records either on the project site or within the 1-mile search radius around the project site.

Aerial Photographs

Aerial photographs of the project area dating to 1957 were obtained as part of the Phase I ESA process. The changes that occurred to the project site and surroundings are summarized in Table 3.7-1.

Table 3.7-1: Aerial Photograph Summary

Year	Scale (inches:feet)	Description
1957	1:6660	The site is currently vacant with few structures located on the eastern portion. The adjacent properties are similarly configured. Levee and Walthall Slough are visible south of the site. The aerial photograph does not cover the adjacent properties to the west.
1963	1:6660	Row crops are observed on the northwest portion of the site. Most of the site however, is vacant.
1968	1:30000	Irrigation ditches and a levee road trending northwest to southeast are observed on the site. Six structures consist of four barns and one residence and an out building are observed east of the residence at 2368 East Woodward Avenue. Weatherbee Lake and residences are located to the west, Walthall Slough and vacant land are observed to the south, vacant land and ranches are observed to the east, Woodward Avenue and vacant land bound the site to the north.
1982	1:8280	Site remains unchanged.
1985	1:63360	Site remains unchanged.
1989	1:63360	Seasonal crops are observed on the site. Ranches and other agricultural development have increased in the surrounding area and around Weatherbee Lake.
1992	1:12000	Row crops are observed on the site. A parking lot is constructed northwest across Woodward Avenue and orchards were observed to the southeast.
1993	1:7992	Site remains unchanged.
1996	1:12000	Site remains unchanged.
1998	1:7992	This photograph shows all of Parcel 1. This parcel and the surrounding properties appear unchanged when compared with the previous aerial photographs.
1999	1:12000	Orchards are observed on the northwestern portion of the subject site in the aerial photos of 1998. Row crops are observed throughout the site. Seven structures (barn, residence, and outbuildings) are present at 2368 East Woodward Avenue. Irrigation ditches are observed onsite.
Source: Environmental Data Resources, 2007, 2008.		

Topographic Maps

Topographic maps of the project area dating to 1915 were obtained as part of the Phase I ESA process. The changes that occur to the project site and surroundings are summarized in Table 3.7-2.

Table 3.7-2: Topographic Map Summary

Year	Scale (inches:feet)	Description
1915	1:31,680	The subject site is mapped as vacant land with a few round hills situated east of the San Joaquin River. Minor ponds are mapped on the western, southern, and central portions of the property. A dredger cut is mapped traversing from the southeast toward the northwest portions of the property. The Walthall Slough is mapped immediately west-southwest. Unnamed streets and Western Pacific Railroad tracks are situated to the north. A school is situated farther to the east of the project site.
1952	1:24,000	A canal is mapped on the central portion of the project site, alongside the levee road and Woodward Avenue is mapped directly north and northwest of the project site. Weatherbee Lake and the associated residential community are mapped west-northwest of the site. A pump and water well are mapped southeast of the site. The Town of Manteca is mapped farther to the northeast of the site.
1968	1:24,000	Seven large and small structures along with a driveway are mapped on the eastern portion of the project site. A levee and a driveway are mapped on the southwestern, western, and southern portions of the project site.
1976	1:24,000	Site remains unchanged.
1987	1:24,000	Site remains unchanged.
1994	1:31,680	A driveway and a structure are mapped on the southwestern portion and a new driveway is mapped on the northeastern portion of the site. Highway 120 is mapped farther to the north of the site.
1996	1:24,000	No changes are apparent. Eight structures, levee road an ponds are still present on the site.
Source: Environmental Data Resources, 2007, 2008		

Common Hazardous Materials

Below are descriptions of common hazardous materials that may be found on developed and agricultural sites. The likelihood of encountering these materials is evaluated, based on site reconnaissance observations by Terrasearch, Inc.

Asbestos

Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals mined for their useful properties, such as thermal insulation, chemical and thermal stability, and high tensile strength. Asbestos is commonly used as an acoustic insulator, thermal insulation, fireproofing, and in other building materials. Asbestos is made up of microscopic bundles of fibers that may become airborne when asbestos-containing materials are damaged or disturbed. When these fibers get into the air, they may be inhaled into the lungs, where they can cause significant health problems. The California Occupational Health and Safety Administration (CalOSHA) defines asbestos-containing construction materials as any material that contains more than 0.1 percent asbestos by weight.

Terrasearch, Inc. visually observed the exterior of the residence located at the project site. Because of the age of the structures onsite, Terrasearch, Inc. concluded that there is a potential for asbestos-containing material (ACM) to be present.

Lead

Lead is a highly toxic metal that was used until the late 1970s in a number of products, most notably in paint. Lead may cause a range of health effects, from behavioral problems and learning disabilities to seizures and death. Primary sources of lead exposure are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated soil. Both the U.S. Environmental Protection Agency (EPA) and the California Department of Health Services define lead paint as containing a minimum of 0.5 percent by weight. Lead-containing waste materials with a concentration greater than 0.1 percent are considered hazardous waste by California law.

Terrasearch, Inc. visually observed the exterior of the residence located at the project site. Because of the age of the structures onsite, Terrasearch, Inc. concluded that there is the potential for lead-based paints (LBP) to be present.

Polychlorinated Biphenyls (PCBs)

Polychlorinated biphenyls (PCBs) are mixtures of synthetic chemicals with similar chemical structures. PCBs can range from oily liquids to waxy solids. Because of their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications, including electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics, and rubber products; in pigments, dyes, and carbonless copy paper; and many other applications. More than 1.5 billion pounds of PCBs were manufactured in the United States prior to cessation of production in 1977.

Before the EPA banned the manufacture of PCBs in 1978, these compounds were commonly incorporated in the manufacture of fluorescent light ballasts. Terrasearch, Inc. concluded from the age of the buildings on the project site that there may be fluorescent light ballasts in the residences that may have PCB-containing capacitors.

Electricity is provided to the site by PG&E via pole-mounted transformers located across E. Woodward Avenue from the site. No staining or evidence of releases was observed associated with the transformers. As the owner of the transformers, PG&E would be responsible for any inspections, testing, and reporting and release response.

Mercury

Mercury is a naturally occurring element that is found in air, water, and soil that has traditionally been used to make products such as fluorescent lamps, switches, and thermometers. Mercury exposure at high levels can harm the brain, heart, kidneys, lungs, and immune system of people of all ages. Scientific studies have shown that high levels of mercury in the bloodstream of unborn babies and young children may harm the developing nervous system, making a child less able to think and learn.

Existing structures onsite would be scheduled for demolition. Based on the age of the buildings on the project site, there may be mercury-containing fluorescent lights and switches. Therefore, building materials containing mercury may be an environmental concern at the project site. Proper disposal of potential mercury-containing building materials will be required prior to demolition.

The Limited Soil Sampling Program conducted as part of the environmental site assessment indicated that mercury levels in the soil were not detected above the method detection level. The complete analytical results are contained in Appendix G. In summary, Terrasearch, Inc. concluded that there is no evidence of mercury in the soil.

Radon

Radon is a carcinogenic, radioactive gas resulting from the natural breakdown of uranium in soil, rock, and water. Radon gas enters a building through cracks in foundations and walls. Once inside the building, radon decay products may become attached to dust particles and inhaled, or the decayed radioactive particles alone may be inhaled and cause damage to lung tissue. The EPA has established a safe radon exposure threshold of 4 picoCuries per liter of air (pCi/l).

The California Department of Health Services publishes indoor radon levels by zip code. The latest results, dated May 2010, indicate the following number of tests exceed the EPA threshold of 4 pCi/l.

- 95330 (Lathrop): 0 of 2
- 95336 (North Manteca): 0 of 5
- 95337 (South Manteca): 1 of 5
- 95366 (Ripon): 0 of 7

Collectively, one of 19 samples (5 percent) taken in the four zip codes in the project vicinity contained radon concentrations in excess of the EPA threshold of 4 pCi/l. The California Department of Health Services defines areas with 0 to 6 percent of indoor radon tests exceeding 4 pCi/l to be of low potential for elevated exposure. Therefore, indoor radon exposure is not considered a significant health risk.

Hydrocarbon Storage in Aboveground and Underground Storage Tanks

Petroleum hydrocarbons are derived from crude oil, which is refined into various petroleum products such as diesel, gasoline, kerosene, lubricants, and heavy fuel oils. Hydrocarbons constituents include benzene, N-heptane, and toluene, and generate health effects such as cancer, leukemia, asthmatic bronchitis, kidney damage, and eye irritation. Hydrocarbons are stored in ASTs and USTs. Leaking ASTs and USTs can result in contamination of groundwater sources or fire and explosion.

The Phase I ESA indicated that no evidence of USTs was observed on the project site during the site reconnaissance. The Phase I ESA of the project site revealed the historic use of UST, which was removed somewhere between 1987 and 1992. Since no permits were obtained for the removal of UST, no additional information is available. The site was not listed in the UST or LUST databases as

containing USTs or having releases from USTs. According to the San Joaquin County Environmental Health Department, no USTs are present onsite.

Four portable and one stationary ASTs were observed on the site. Elevated concentrations of petroleum hydrocarbons, PCBs and moderate concentrations of VOCs were detected near the AST and stained soil area in both soil and groundwater sample.

3.7.3 - Regulatory Framework

Federal

U.S. Environmental Protection Agency

The EPA leads the nation's environmental science, research, education, and assessment efforts. The EPA's mission is to protect human health and to safeguard the natural environment, related to air, water, and land. The EPA works closely with other federal agencies, state and local governments, and Indian tribes to develop and enforce regulations under existing environmental laws. The EPA is primarily responsible for researching and setting national standards for a variety of environmental programs and delegates to states and tribes responsibility for issuing permits, and monitoring and enforcing compliance. When national standards are not met, the EPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality. The EPA also works with industries and all levels of government in a wide variety of voluntary pollution prevention programs and energy conservation efforts.

EPA Region 9 has jurisdiction over Manteca and the southwestern United States (Arizona, California, Nevada, and Hawaii).

EPA programs related to hazardous materials include:

- Community Right-to-Know Information
- Pesticide Management
- Toxic Release Inventory
- Brownfields (CalSites Database)
- Cleanup Technologies
- Compliance Assistance
- Emergency Response
- Hazardous Waste
- Oil Spills

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from the point of generation to their

ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program establishes tank and leak detection standards, including spill and overflow protection devices for new tanks. The tanks must also meet performance standards to ensure that the stored material will not corrode the tanks. Owners and operators of USTs had until December 1998 to meet the new tank standards. As of 2001, an estimated 85 percent of USTs complied with the required standards.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The act was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances releases. The act deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

State

California Health and Safety Code

The California Environmental Protection Agency has established rules governing the use of hazardous materials and the management of hazardous wastes. California Health and Safety Code Sections 25531, et seq. incorporate the requirements of Superfund Amendments and Reauthorization Act and the Clean Air Act as they pertain to hazardous materials. Health and Safety Code Section 25534 directs facility owners storing or handling acutely hazardous materials in reportable quantities to develop a Risk Management Plan (RMP). The RMP must be submitted to the appropriate local authorities, the designated local administering agency, and the EPA for review and approval.

CEQA and the Cortese List

The Cortese List (Hazardous Waste and Substances Site List) is a planning document used by the State, local agencies, and developers to comply with CEQA requirements to consider Government Code Section 5962.5 in evaluating proposed development projects. Section 65962.5 states that

> The list should contain all hazardous waste facilities subject to corrective action , all hazardous waste property or border zone property designations, all information received on hazardous waste disposals on public land, all hazardous substance release sites listed pursuance to Government Code Section 25356, and all sites that were included in the former Abandonment Site Assessment Program.

California Environmental Protection Agency (Cal EPA)

Government Code Section 65962.5 requires the California Environmental Protection Agency (Cal EPA) to develop a Cortese List at least annually. The Department of Toxic Substances Control is responsible for a portion of the information on the list, and other local and state government agencies are required to provide additional information. Cal EPA operates the Air Resources Board, the Department of Pesticide Regulation, Department of Toxic Substances Control, Integrated Waste Management Board, Office of Environmental Health Hazard Assessment, and the State Water Resources Control Board. The function of each of these six offices is discussed below:

Air Resources Board (CARB): To promote and protect public health, welfare, and ecological resources through the effective and efficient reduction of air pollutants in recognition and consideration of the effects on the economy of the State.

Department of Pesticide Regulation (DPR): Regulates all aspects of pesticide sales and use to protect the public health and the environment for the purpose of evaluating and mitigating impacts of pesticide use, maintaining the safety of the pesticide workplace, ensuring product effectiveness, and encouraging the development and use of reduced-risk pest control practices.

Department of Toxic Substances Control (DTSC): The Department's mission is to restore, protect, and enhance the environment, to ensure public health, environmental quality, and economic vitality by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention. DTSC protects residents from exposures to hazardous wastes. DTSC operates programs to:

- Deal with the aftermath of improper hazardous waste management by overseeing site cleanups.
- Prevent releases of hazardous waste by ensuring that those who generate, handle, transport, store, and dispose of wastes do so properly.
- Take enforcement actions against those who fail to manage hazardous wastes appropriately.
- Explore and promote means of preventing pollution, and encourage reuse and recycling.
- Evaluate soil, water, and air samples taken at sites, and develop new analytical methods.

Cal Recycle: Protects the public health and safety and the environment through waste prevention, waste diversion, and safe waste processing and disposal. Cal Recycle is responsible for managing California's solid waste stream. Cal Recycle is helping California divert its waste from landfills by:

- Developing waste reduction programs.
- Providing public education and outreach.
- Assisting local governments and businesses.
- Fostering market development for recyclable materials.

- Encouraging used oil recycling.
- Regulating waste management facilities.
- Cleaning up abandoned and illegal dump sites.

State Water Resources Control Board (SWRCB): Preserves and enhances the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations. The SRWQCB maintains the Leaking Underground Storage Tank Information System (LUTIS) Database, which contains information on registered leaking underground storage tanks (LUSTs) in the State.

State Regulatory Programs Division (SRPD)

The SRPD oversees the technical implementation of the State's Unified Program; a consolidation of six environmental programs at the local level, and conducts reviews of Unified Program agencies to ensure their programs are consistent statewide, conform to standards, and deliver quality environmental protection at the local level. SRPD also carries out the State's hazardous waste recycling and resource recovery program designed to facilitate recycling and reuse of hazardous waste. SRPD conducts a corrective action oversight program that assures any releases of hazardous constituents at generator facilities that conduct onsite treatment of hazardous waste are safely and effectively remediated, and oversees the hazardous waste generator and onsite waste treatment surveillance and enforcement program carried out by local Unified Programs.

Central Valley Regional Water Quality Control Board (RWQCB)

There are nine Regional Water Quality Control Boards (RWQCBs) throughout the State. The Central Valley RWQCB has jurisdiction over the City of Manteca, with offices in Stockton. Individual RWQCBs function as the lead agencies responsible for identifying, monitoring, and cleaning up LUSTs. Storage of hazardous materials in USTs is regulated by the State Water Resources Control Board (SWRCB), which oversees the nine RWQCBs.

Local

San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has jurisdiction over the City of Manteca and deals with pollutants, including hazardous air pollutants such as asbestos. Information on the SJVAPCD and air quality is provided in Section 3.3, Air Quality/Greenhouse Gas Emissions of this EIR.

San Joaquin County

Certified Unified Program Agencies (CUPA)

Senate Bill 1082 (1993) required the establishment of a unified hazardous waste and hazardous materials management program. The result was Cal EPA's United Program, which consolidates the actions of the Department of Toxic Substances Control, the State Water Resources Control Board, the Regional Water Quality Control Board, the Office of Emergency Services, and the State Fire

Marshall. The Department of Toxic Substances Control oversees the implementation of the hazardous waste generator and onsite treatment program, one of six environmental programs at the local level, through Certified Unified Program Agencies (CUPAs). CUPAs have authority to enforce regulations, conduct inspections, administer penalties, and hold hearings. San Joaquin County implements the CUPA that has enforcement authority over the City of Manteca. Offices are located in Stockton.

Hazardous waste programs are managed and implemented locally through the San Joaquin County's Certified Unified Program Agency (CUPA). The County hosts a variety of hazardous waste collection events throughout the County in an effort to deter improper disposal of hazardous wastes. Household Hazardous Waste (HHW) Collection Facilities receive hazardous waste that comes from homes and, in some cases, from small business hazardous waste generators. Household wastes include pesticides, batteries, old paint, solvents, used oil, antifreeze, and other chemicals that should not go into a regular municipal landfill.

San Joaquin County Public Health Services monitors the possible groundwater and soil contamination from underground tanks. Its funding mechanism is a billing contract with the State Water Quality Control Board. Public Health Services clean-up enforcement falls under Title 23, California Code of Regulations. Case workers monitor site-specific development, and must be contacted prior to development.

City of Manteca

General Plan

The City of Manteca General Plan established the following goals and policies related to hazardous materials that are applicable to the proposed project:

- **Goal S-5:** The City shall protect the health, safety, natural resources, and property through regulation of use, storage, transport, and disposal of hazardous materials.
- **Policy S-P-16:** City approvals of all new development shall consider the potential for the production, use, storage, and transport of hazardous materials and provide for reasonable controls on such hazardous materials.
- **Policy S-P-17:** Within its authority, the City shall regulate the production, use, storage, and transport of hazardous materials to protect the health of Manteca residents.

3.7.4 - Methodology

This section is based upon the Phase I and Phase II ESAs prepared by Terrasearch, Inc., dated May 2007 and April 2008, respectively. The Phase I and Phase II ESAs included a review of the project site's prior-use history; a review of neighboring properties based on reasonably ascertainable local, state, and federal regulatory agency environmental databases compiled by EDR; a review of historic aerial photographs, topographic maps, and business directories compiled by EDR; a visual reconnaissance for hazardous material contamination; a search for ASTs and USTs; and completion

of questionnaires by the current landowners. Terrasearch, Inc., personnel performed site reconnaissance of the project site in May 2007 and April 2008 to document existing conditions and potential environmental hazards.

3.7.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, hazards and hazardous materials impacts resulting from the implementation of the proposed project would be considered significant if the project would:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (Refer to Section 7, Effects Found Not To Be Significant.)

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working the project area? (Refer to Section 7, Effects Found Not To Be Significant.)

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? (Refer to Section 7, Effects Found Not To Be Significant.)

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

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? (Refer to Section 7, Effects Found Not To Be Significant.)

3.7.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Past or Present Site Usage

Impact HAZ-1:	**Development of the proposed project does not have the potential to expose human health and the environment to hazardous materials associated with past or present usage of the project site or surrounding land uses.**

Impact Analysis

This impact will evaluate the proposed project's potential to expose persons or the environment to hazardous materials associated with past and current uses of the project site, as well as from activities at surrounding land uses.

The Phase I and Phase II ESAs identified several hazardous conditions that are present on the project site. Each issue is summarized below.

Aboveground Storage Tank

Elevated concentrations of petroleum hydrocarbons, PCBs and moderate concentrations of VOCs were detected near the AST and stained soil area in both soil and groundwater sample. Elevated concentrations of beta- and gamma-BHC were detected south of the residence and may indicate former pesticide storage and/or pesticide mixing areas. TPHg, TEPHd, TEPHmo, and Aroclor 1260 were detected above Preliminary Remediation Goals and Environmental Screening Levels. Based on these results, it was recommended by Terrasearch, Inc. that an additional environmental assessment be conducted to delineate the horizontal and vertical extent of the TPH-D presence in the soils near the deep soil sample location.

Terrasearch, Inc. and Jim Thorpe, Inc. performed soil excavation and monitoring activities for the affected area in March 2008. Approximately 314 tons of soil and 12 tons of concrete were removed and disposed of at the Forward Landfill. Six soil samples were obtained from the excavation area and sent to a laboratory for confirmation testing. The testing indicated that no hydrocarbons were detected in any of the samples. Based on these results, Terrasearch, Inc. concluded that further soil remediation activities were necessary. A complete description of the soil excavation and monitoring activities is provided in the Summary of Soil Excavation Monitoring Activities in Appendix G.

Terrasearch, Inc. noted that the soil excavation activities did not address the issue of the suspected groundwater contamination. As such, Terrasearch, Inc. recommended that the applicant initiate groundwater monitoring in conjunction with the Central Valley Regional Water Quality Control Board. The recommendation is incorporated as Mitigation Measure HAZ-1a.

Agricultural Chemicals

Based on the current and historic use of the project site as cultivated farmland, agricultural chemicals such as pesticides, herbicides, and fertilizer would historically have been used on the site. Information for the current use, storage, and application rates was obtained; however, information regarding historic use, storage, or application rates was not available. If the chemicals were applied in accordance with manufacturer recommendations, residuals remaining in site soils would be

expected to be similar to other area properties. A Phase II ESA did not detect any organochlorine pesticides within the surficial soil beneath the entire site. However, elevated concentrations of beta- and gamma-BHC were detected south of the residence and may indicate former pesticide storage and/or pesticide mixing areas. Terrasearch, Inc. recommended that the applicant conduct near-surface soil sampling and testing for pesticides within this area. The recommendation is incorporated as Mitigation Measure HAZ-1b.

Asbestos-Containing Materials

Based on the age of the structures onsite, there is the likelihood of encountering building materials containing asbestos. Mitigation Measure HAZ-1c is proposed requiring that these materials be properly removed and disposed of by a certified contractor prior to demolition activities. The implementation of this mitigation measure would reduce impacts to a level of less than significant.

Lead-Based Paint

Based on the age of the structures onsite, it is likely that lead-based paint (LBP) may exist onsite. Mitigation Measure HAZ-1c is proposed requiring that these materials be properly removed and disposed of by a certified contractor prior to demolition activities. The implementation of this mitigation measure would reduce impacts to a level of less than significant.

Other Hazardous Waste Containing Building Materials

Based on the age of the structures onsite, there is the potential to encounter fluorescent lights with PCB-containing ballasts and light switches that contain mercury. Mitigation Measure HAZ-1c is proposed requiring that these materials be properly removed and disposed of by a certified contractor prior to demolition activities. The implementation of this mitigation measure would reduce impacts to a level of less than significant.

Wells and Septic Systems

The project site may contain onsite wells and septic systems associated with the existing rural residential uses. Improperly abandoned wells and septic tanks can create risks to human health and the environment. The San Joaquin County Environmental Health Department requested in its Notice of Preparation comment letter (dated August 12, 2010) that existing wells and septic systems be destroyed prior to the commencement of development activities. Accordingly, this request is incorporated as Mitigation Measure HAZ-1d. With the implementation of this mitigation measure, impacts would be reduced to a level of less than significant.

Government Code Section 65962.5

The project site is not listed on any hazardous materials sites compiled pursuant to Government Code Section 65962.5.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HAZ-1a Prior to recordation of the final map, the applicant shall retain a qualified consultant to perform groundwater sampling in the vicinity of the former aboveground storage tank. If the sampling determines that concentrations of hydrocarbons exceed acceptable levels, the applicant shall consult with the Central Valley Regional Water Quality Control Board regarding ongoing monitoring and remediation activities. If necessary, the final map shall include provisions to allow groundwater monitoring and remediation to occur during project construction and operations.

MM HAZ-1b Prior to issuance of grading permits, the project applicant shall retain a qualified consultant to perform testing of soils in the vicinity of the residence for the presence of residual concentrations of agricultural chemicals. Soils shall be laboratory tested for organochlorine pesticides in accordance with California Department of Toxic Substances Control (DTSC) guidelines. If the testing yields concentrations in excess of acceptable limits for commercial development, the project applicant shall retain a qualified contractor to perform soil remediation in accordance with DTSC guidelines. The soil remediation activities shall be completed prior to grading activities. The applicant shall submit documentation to the City of Manteca demonstrating that soil testing was performed and any necessary remediation was completed as part of the grading permit application.

MM HAZ-1c Prior to demolition activities of any structures located on the project site, the project applicant shall retain a certified hazardous waste contractor to determine the presence or absence of building materials or equipment that contains hazardous waste, including asbestos, lead-based paint, mercury, and PCBs. If such substances are found to be present, the contractor shall properly remove and dispose of these hazardous materials in accordance with federal and state law. All removal activities shall be completed prior to commencement of demolition activities. Following completion of removal activities, the applicant shall submit documentation to the City of Manteca verifying that all hazardous materials were properly removed and disposed.

MM HAZ-1d Prior to grading activities, any onsite wells or septic systems shall be destroyed under permit and inspection with San Joaquin County Environmental Health Department.

Level of Significance After Mitigation

Less than significant impact.

Risk of Upset

Impact HAZ-2:	**The proposed project may create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions.**

Impact Analysis

This impact will evaluate the proposed project's potential to create hazards caused by the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Short-Term Impacts

Project construction activities may involve the use and transport of hazardous materials. These materials may include fuels, oils, mechanical fluids, and other chemicals used during construction. 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. In addition, Mitigation Measure HYD-1 requires the project applicant to implement a Stormwater Pollution Prevention Plan during construction activities to prevent contaminated runoff from leaving the project site. Therefore, no significant impacts would occur during construction activities.

Because of the age of the onsite structures, there is the potential for exposure to hazardous building materials such as asbestos and lead-based paint, which if disrupted can become a hazard. As discussed previously in Impact HAZ-1, Mitigation Measure HAZ-1c is proposed to require the proper removal and disposal of these hazardous materials in accordance with federal and state law. The implementation of this mitigation would reduce impacts to a level of less than significant.

Long-Term Impacts

Typically, residential land uses do not generate, store, or dispose of significant quantities of hazardous materials. Individual residences would use cleaning substances such as solvents. However, these substances would not be used in substantial quantities and would not create a significant hazard to the public or the environment. General landscaping and maintenance will include the use of pest control, herbicide, and janitorial products such as commercial cleaners.

In summary, the proposed project would not potentially create a significant hazard to the public or the environment from routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions. Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures HAZ-1c and HYD-1.

Level of Significance After Mitigation

Less than significant impact.

Emergency Response and Evacuation

Impact HAZ-3:	**The proposed project may impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.**

Impact Analysis

This impact will evaluate the proposed project's potential to impair or physically interfere with an emergency response plan or emergency evacuation plan.

There are no adopted emergency response plans or emergency evacuation plans that are directly applicable to the proposed project. As such, this impact will address the general issue of emergency response and evacuation.

As discussed in Impact TRANS-4 in Section 3.13, Transportation, as currently proposed, all emergency vehicles would be required to use Woodward Avenue to reach the project site. If Woodward Avenue were to become impassable because of an incident (fire, flooding, auto accident, etc.), emergency responders could not reach the project site, nor could it be evacuated. This is considered a potentially significant impact.

Mitigation Measure TRANS-4 requires the project applicant to install a temporary Emergency Vehicle Access (EVA) to provide a second point of entry to the project site for emergency responders. The EVA would provide access from the east until a second permanent roadway provides access to the project site. With the implementation of this mitigation measure, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure TRANS-4.

Level of Significance After Mitigation

Less than significant impact.

3.8 - Hydrology and Water Quality

3.8.1 - Introduction

This section describes the existing hydrology and water quality setting and potential effects from project implementation on the site and its surrounding area. The existing water resource conditions in the project area were evaluated using published scientific and project-specific reports and maps, and information gathered during a site visit. Descriptions and analysis in this section are based largely on information from the Levee Seepage Evaluation—Stations 854+00 to 991+31, dated March 23, 2009, prepared by Engeo, Inc.; the Western Regional Climate Center; the Federal Emergency Management Agency (FEMA), the California Department of Water Resources (DWR), the United States Geological Survey (USGS), the State Water Resources Control Board (SWRCB), the San Joaquin County Office of Emergency Services, and the City of Manteca General Plan. The levee evaluation report is included in this EIR as Appendix H.

3.8.2 - Environmental Setting

Climate

The City of Manteca is characterized by a Mediterranean climate with warm summers, mild winters, and moderate precipitation. Temperatures range from an average monthly high of 93.2 degrees Fahrenheit (ºF) in July to an average monthly low of 35.4ºF in December. Average annual rainfall is 10.4 inches with the majority occurring from November to March. General meteorological data for the Manteca area, as measured at the Manteca weather station, are presented in Table 3.8-1.

Table 3.8-1: Regional Climate Summary

Month	Temperature (°F)		Average Total Precipitation (inches)
	Average High	Average Low	
January	53.7	36.3	1.65
February	61.1	39.3	1.35
March	66.3	42.1	1.52
April	72.4	45.2	0.95
May	80.9	50.5	0.21
June	88.6	55.9	0.09
July	93.2	59.2	0.12
August	91.5	58.5	0.23
September	87.7	55.9	0.24
October	77.7	49.2	0.97
November	61.1	40.4	1.58
December	53.8	35.4	1.51
Annual Average	**74.2**	**47.5**	**10.41**

Table 3.8-1 (cont.): Regional Climate Summary

Month	Temperature (°F)		Average Total Precipitation (inches)
	Average High	Average Low	

Notes:
Averages derived from measurements taken between 1971 and 2000 at Manteca, California (#045303).
Source: Western Regional Climate Center, 2010.

Watershed and Surface Water Features

The project site is located within the 32,000-square-mile San Joaquin River Watershed. The valley portion of the watershed, which includes the project area, consists of urbanized areas growing within a larger agricultural setting. The San Joaquin River spans roughly 300 miles, beginning along the western slopes of the Sierra Nevada and joined by eight major tributaries as it moves northwest to its confluence with the Sacramento River in the Delta. The project area is located within the official secondary zone of the Sacramento-San Joaquin Delta. The project area is approximately 3,500 feet east of the Lower San Joaquin River and north of one of its main tributaries, the Stanislaus River, and it is south of another large tributary, the Calaveras River, which runs through the City of Stockton.

The San Joaquin River downstream of its confluence with the Stanislaus River becomes tidally influenced and eventually splits into several tributaries within the Delta. The 1944 Flood Control Act for the lower San Joaquin River resulted in miles of federal project levees and several large dams and reservoirs built along the San Joaquin River and many of its tributaries, such as Friant Dam, on the upper San Joaquin River in the Sierra foothills and New Melones Dam on the Stanislaus River.

Drainage

The project area encompasses generally flat terrain with an approximate ground surface elevation varying from 17 to 19 feet (National Geodetic Vertical Datum 1929). Drainage appears to follow the local topography from southeast toward the northwest, along the local topography.

Surface Water Quality

No water quality monitoring data was obtained for the project site, but in light of the past and current agricultural land use practices in the area, it is likely that there are increased levels of certain pollutants. There may be increased levels of pesticides and herbicides associated with maintenance and operation of the agricultural fields that could be introduced into the onsite and adjacent drainages. The reach of the San Joaquin River from the Stanislaus River to the Delta Boundary is listed as impaired on the 2006 Clean Water Act 303(d) list for boron, DDT, electrical conductivity, Group A pesticides, mercury, and toxaphene. These pollutants are a result of agriculture practices and in the case of mercury, resource extraction. The same reach of the San Joaquin River is listed for approved U.S. Environmental Protection Agency (EPA) Total Maximum Daily Loads (TMDLs) for chlorpyrifos, diazinon, selenium, and agricultural pollutants.

Groundwater

According to the DWR, the San Joaquin County and City of Manteca areas rely heavily upon groundwater, with roughly 30 percent of the region's annual supply used for agricultural and urban purposes.

The project site lies within the Eastern San Joaquin Subbasin, which is part of the San Joaquin Valley Groundwater Basin. The Eastern San Joaquin Subbasin has a surface area of 707,000 acres, or 1,110 square miles. The subbasin is drained by the San Joaquin River and several of its major tributaries, including the Stanislaus, Calaveras, and Mokelumne rivers. Waterbearing formations of significance in this subbasin include Alluvium and Modesto/Riverbank formations, flood basin deposits, Laguna Formation, and Mehrten Formation. At the project site, groundwater levels have been shown to vary at depths between 10 and 17 feet.

Basin Boundaries and Hydrology

The project area is located within the 1,105-square-mile Eastern San Joaquin Subbasin of the San Joaquin Valley Groundwater Basin. The DWR Bulletin 118 reports a decline in groundwater levels in San Joaquin County in the past 40 years, averaging a loss of 1.7 feet per year. Because of groundwater overdraft, there is a significant cone of depression extending to depths of 60 feet or more east of Stockton and northeast of the project area. Groundwater flow now converges on the depression with steep gradients moving poorer quality water with typically higher total dissolved solids (TDS) and chloride levels eastward from the Delta. The Northeastern San Joaquin County Groundwater Banking Authority reports that projected rates of this saline front's eastward migration are approximately 150 to 250 feet per year and threaten the long-term sustainability of a critical public and agricultural water resource for San Joaquin County.

Groundwater Level Trends

Two DWR, long-term monitored groundwater wells are near the project area: one irrigation well just south of E. Woodward Road and the other—unused—west of S. Woodward Avenue show water level averages of 24 and 12 feet below ground surface (bgs), respectively. Levels ranged from 12 to 39 feet bgs for the irrigation well and 7 to 27 feet bgs for the undetermined well, with both wells showing the greatest depth to groundwater occurrence in the fall of 1977. According to a 2009 Groundwater Monitoring Report, all 17 South San Joaquin Irrigation District (SSJID) wells showed a decrease in groundwater levels in the range of 0.5 to 3.5 feet from fall 2008 to fall 2009.

Groundwater Quality

In general, Bulletin 118 states that groundwater quality in the San Joaquin River Hydrologic Region is suitable for most urban and agricultural uses with some localized exceptions. Primary constituents of concern are TDS, nitrate, boron, chloride, and organic compounds.

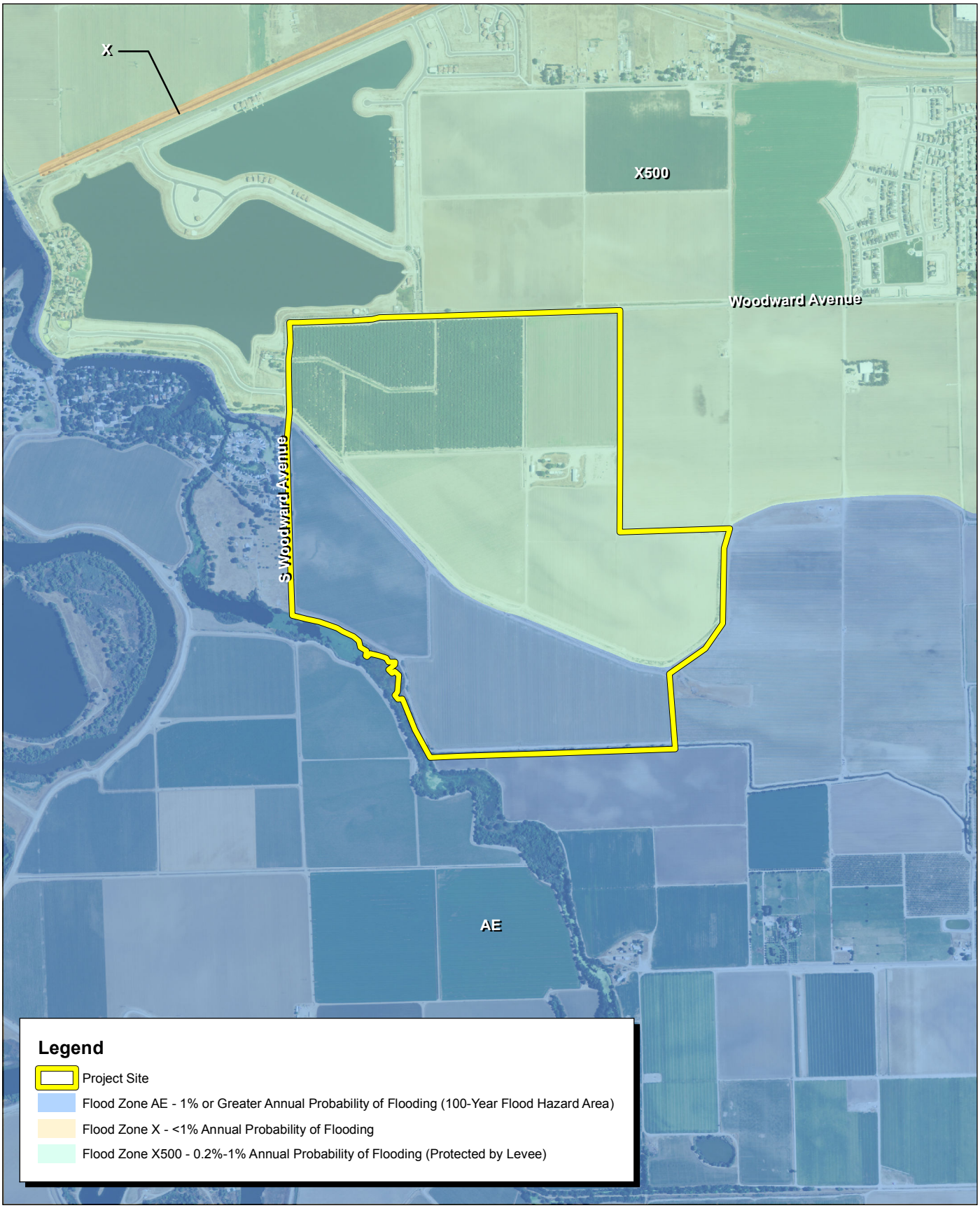
The majority of groundwater in the Eastern San Joaquin Subbasin is characterized by calcium-magnesium bicarbonate and calcium-sodium bicarbonate. Because of declining water levels and

eastward movement of high salinity water, the management and maintenance of groundwater quality is a continual challenge. According to the San Joaquin County 2009 Groundwater Report, saline intrusion from the west is a continuing concern for groundwater quality in the basin. Analysis of 174 water supply wells in the subbasin showed TDS in the range of 30 to 1,632 milligrams per liter (mg/L) with an average of 310 mg/L and specific conductance from 78 to 5,390 (μmhos/cm) with a mean value of 685 μmhos/cm and the highest values occurring along the western margins. Large areas south of Stockton and east of Manteca, which likely include the project area, show elevated levels of nitrate in the groundwater.

Flood Plain Mapping

Located at the downstream end of the San Joaquin River Basin, much of San Joaquin County is in natural floodplains surrounded by an intertwining system of rivers, streams, sloughs, and drainage ditches, all of which are susceptible to flooding. Floods typically occur from prolonged rain events during the months of November through April. With increased risks of future flooding related to aging infrastructure and expected climate change and new stricter floodplain regulations, San Joaquin County is working closely with the DWR and the United States Army Corps of Engineers (USACE) to improve upon flood control management and infrastructure. The San Joaquin River Flood Control System, part of the federal project initiated by the 1944 Flood Control Act, includes miles of levees on the lower San Joaquin River, Calaveras River, Stanislaus River, Lone Tree Creek, and Littlejohns Creek, the majority of which are maintained by local reclamation districts. Even after Friant Dam on the San Joaquin River and the major flood protection facilities were constructed, major floods have continued to occur in the County. Major flood events occurred along the San Joaquin River in December 1955, 1962–63, 1968–69, and four times since 1980, including the January 1997 event where levees failed in 27 locations.

The north portion of the project site is outside of the Federal Emergency Management Agency's (FEMA) Special Flood Hazard Area, a regulated area considered subject to flooding by a 1-percent annual chance flood (i.e., 100-year flood event). However, this portion of the project area is identified as Zone X, which signifies that it is protected from the 100-year event by existing levees (Exhibit 3.8-1). According to the DWR Levee Flood Protection Zone Map for the project area, the project site would be inundated to an unknown depth if the project levees in the area were subjected to waters reaching the top of the levee and causing failure. According to an October 2008 Preliminary Best Available Floodplain Data Map (BAM) provided by DWR for informational purposes only, Reclamation District 17 was granted a Provisionally Accredited Levee (PAL) status for this area by FEMA. The PAL designation was created by FEMA to facilitate the certification process for communities behind levees that are reasonably expected to continue to provide a 100-year level of flood protection.



Source: San Joaquin County NAIP, 2009.

Michael Brandman Associates

NORTH

1,600 800 0 1,600 Feet

Exhibit 3.8-1
Special Flood Hazard Areas

Levees

A dry land levee, part of the Reclamation District No. 17 (RD-17) levee system, crosses the project site. The overall area protected by the RD-17 levees is approximately 13,000 acres bound by the French Camp Slough to the north, the San Joaquin River to the west, and Weatherbee Lake to the south. The RD-17 Project Levee is situated along the south (left) bank of French Camp Slough, the east (right) bank of the San Joaquin River, and the north (right) bank of the Weatherbee Lake area. The entire project levee is continuous, extending approximately 16 miles from Stockton, California south to unincorporated San Joaquin County, California.

The portion of the levee that exists within project site is between the approximate levee Stations 540+00 (South Woodward Road) and 930+00 (where the levee turns due east). The crown elevation of the levee varies between approximately 27 and 32 feet (NGVD29). The crown width varies between 15 and 20 feet. The majority of the waterside levee slopes have an approximate gradient of 3:1 (horizontal:vertical) along the entire area; however, there are areas where the gradient ranges from 10:1 to 2.5:1. Similarly, the typical landside gradient along the levee is approximately 3:1 with areas that flatten to slopes of approximately 6:1. Active, relatively flat agricultural lands are adjacent to both the land and water sides of the dry land levee.

Field exploration was conducted in July 2008 and consisted of drilling three borings to a maximum depth of approximately 139.5 feet and advancing 13 Cone Penetration Tests to a maximum depth of approximately 140.0 feet. Selected samples recovered during drilling were tested to determine the following soil characteristics: natural unit weight and moisture content, plasticity index, grain size distribution, and triaxial compression test.

The soil encountered in exploration locations generally consisted of loose to medium dense sand to silty sand with occasional thin layers of silt and clay within the levee sections, over a thick dense to very dense sand to silty sand layer. Groundwater was measured in all of the exploratory borings at depths ranging from elevations 7.0 to 16.5 feet (NGVD29). Because of San Joaquin County geotechnical boring permit requirements, borings could not be left open for sufficient periods of time to establish equilibrium groundwater conditions; therefore, stabilized depths to groundwater could not generally be measured accurately.

The levee seepage evaluation considered the 100-year water surface elevation that is based on the 1997 downstream elevation control at the San Joaquin River for Reclamation District No. 2094-Walthall Tract (RD-2094). RD-2094 is located east of Walthall Slough, immediately south of RD-17's dry land levee. The Plan of Reclamation for RD-17 specifies the performance of a relief cut along the RD-2094 San Joaquin River Levee at elevation 26 feet (NGVD29). The considered 100-year flood elevation is continuous at elevation of 26 feet throughout the entire levee length.

Engeo, Inc. divided the limits of this evaluation into four reaches with the following approximate stationing: A (854+00 to 909+00), B (909+00 to 959+00), C (959+00 to 972+00), and D (972+00 to

991+29). Exhibit 3.8-2 includes an exhibit showing the four reaches. The limits of these reaches are based on characterizations of similar levee geometry, subsurface stratigraphy, soil properties, anticipated similarities in possible seepage mitigation measures, and physical site constraints (such as existing swales and levee delineation). A seepage analysis using the software program Seep/w was performed in this levee evaluation. Seep/w is a two-dimensional, finite solution program that is widely used in soil and other material seepage evaluations. A seepage analysis was performed on the existing levee conditions for Reaches A, B, C, and D as well as the currently proposed graded conditions for Reach A and the portion of Reach B that is located adjacent to the project site.

The existing levee studied in the evaluation meets the current USACE guidance for under seepage; however, the levee has a low potential for through seepage near the levee toe. The results of the seepage analysis based on the existing topography using Seep/w are summarized in Table 3.8-2.

Table 3.8-2: Seepage Analysis - Existing Conditions

Reach	Approximate Limits	Exit Gradient	Comments
A	854+00 to 909+00	0.38	The free water surface level exits the landside face approximately 2 feet above the land side toe.
B	909+00 to 959+00	0.38	The free water surface level exits at the landside toe.
C	959+00 to 972+00	0.35	The free water surface level exits the landside face approximately 2 feet above the land side toe.
D	972+00 to 991+29	0.02	The free water surface level exits at the landside toe. The crown elevation of the levee provides approximately 18 inches of freeboard.
Notes: Exhibit 3.8-2 depicts the location of each reach. Source: Engeo, Inc., 2009			

Dams

A remote—but potentially catastrophic—threat to areas in San Joaquin County is from the large quantities of water held in reservoirs behind 14 major dams on the Mokelumne, Calaveras, and Stanislaus rivers. Complete or partial failure of any of these dams would cause inundation and flooding across vast areas of agricultural, residential, and urban landscapes. According to dam inundation maps, the project area would be completely inundated by failure of the New Melones Dam on the Stanislaus River about 60 miles upstream of its confluence with the San Joaquin River in Calaveras County with a maximum storage capacity of 2.4 million acre-feet. If this dam failed, its predicted flood wave would arrive at the City of Manteca in roughly 8 hours. The project site appears completely inundated upon failure of the San Luis Dam located in Merced County (approximately 50 miles to the south) with a maximum storage capacity of just over 2 million acre-feet. This flood wave is predicted to reach Manteca in approximately 30 hours.



Source: ENGEO, USGS, March, 2009.

NORTH

1,300 650 0 1,300 Feet

Michael Brandman Associates

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Exhibit 3.8-2
Dry Levee Reaches

3.8.3 - Regulatory Framework

Federal

Clean Water Act

Section 303 of the 1972 Federal Clean Water Act (CWA) requires states to adopt water quality standards for all surface waters of the United States. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards. (See a description of the State Porter-Cologne Water Quality Control Act, below.) Standards are based on the designated beneficial use(s) of the water body. Where multiple uses exist, water quality standards must protect the most sensitive use.

Section 402 of the CWA mandates that certain types of construction activity comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) stormwater program. The Phase II Rule, issued in 1999, requires that construction activities that disturb land equal to or greater than 1 acre require permitting under the NPDES program. In California, permitting occurs under the General Permit for Stormwater Discharges Associated with Construction Activity, issued to the SWRCB, implemented and enforced by the nine Regional Water Quality Control Boards (RWQCBs). Effective July 1, 2010, all dischargers whose projects includes clearing, grading or stockpiling activities expected to disturb 1 or more acres of soil are required to obtain compliance under the NPDES Construction General Permit Order 2009-0009-DWQ.

This General Permit requires all dischargers, where construction activity disturbs 1 or more acres, to take the following measures:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to include a site map(s) of existing and proposed building and roadway footprints, drainage patterns and storm water collection and discharge points, and pre- and post- project topography;
2. Describe types and placement of Best Management Practices (BMPs) in the SWPPP that will be used to protect storm water quality.
3. Provide a visual and chemical (if non-visible pollutants are expected) monitoring program for implementation upon BMP failure; and
4. Provide a sediment monitoring plan if the area discharges directly to a water body listed on the 303(d) list for sediment.

To obtain coverage, the landowner must file a Notice of Intent (NOI) with the SWRCB. The notice is required to include the requirements listed above. When project construction is completed, the landowner must file a notice of termination.

The law requires that a permit (Section 404) be obtained from the USACE for any dredge or fill materials into wetlands or waters of the United States.

Floodplain Regulations

Executive Order 11988 for Floodplain Management (May 24, 1977) directs all federal agencies to evaluate potential effects of any actions it may take in the floodplain and to avoid all adverse impacts associated with modifications to floodplains. It also directs federal agencies to avoid floodplain development whenever there is a practicable alternative and to restore and preserve the natural and beneficial values served by the floodplains.

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) oversees floodplains and administers the National Flood Insurance Program adopted under the National Flood Insurance Act of 1968. The program makes federally subsidized flood insurance available to property owners within communities that participate in the program. Areas of special flood hazard (those subject to inundation by a 100-year flood) are identified by FEMA through regulatory flood maps titled Flood Insurance Rate Maps. The National Flood Insurance Program mandates that development cannot occur within the regulatory floodplain (typically the 100-year floodplain) if that development results in an increase of more than 1 foot in flood elevation. In addition, development is not allowed in delineated floodways within the regulatory floodplain.

United States Army Corps of Engineers

The USACE constructs and operates regional scale flood protection systems in cooperation with State and local agencies. The USACE is responsible for the Lower San Joaquin River Flood Control Project built in the 1960s.

Special Districts

Reclamation and Levee Districts are special districts responsible for reclaiming and/or maintaining land subject to frequent flooding via levee and dike systems within urban and rural areas. The USACE was responsible for constructing much of the levee system in the early to mid-1900s, but then turned it over to the local Reclamation and Levee Districts for maintenance. Reclamation and Levee Districts are responsible for preventing flooding within their jurisdictions by maintaining levees and related facilities such as pump stations. Reclamation and Levee Districts are authorized to operate through DWR and USACE.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 authorized the SWRCB to provide comprehensive protection for California's waters through water allocation and water quality protection. The SWRCB implements the requirement of the Clean Water Act Section 303, indicating that water quality standards have to be set for certain waters by adopting water quality control plans

under the Porter-Cologne Act. The Porter-Cologne Act established the responsibilities and authorities of the nine RWQCBs, which include preparing water quality plans for areas in the region, identifying water quality objectives, and issuing NPDES permits and Waste Discharge Requirements. Water quality objectives are defined as limits or levels of water quality constituents and characteristics established for reasonable protection of beneficial uses or prevention of nuisance. The Porter-Cologne Act was later amended to provide the authority delegated from the EPA to issue NPDES permits.

The Central Valley RWQCB's Basin Plan states the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. Regional plan objectives and discharge requirements are implemented through the issuance of Waste Discharge Requirements or NPDES permits.

Section 303(d) of the CWA requires that the SWRCB identify surface water bodies within California that do not meet established water quality standards. Once identified, the affected water body is included in the SWRCB's "303(d) Listing of Impaired Water Bodies," and a comprehensive program must then be developed to limit the amount of pollutant discharges into that water body. This program includes the establishment of "total maximum daily loads" (TMDL) for pollutant discharges into the designated water body. The most recent 303(d) listing for California was approved by the EPA in 2006.

As mentioned under Surface Water Quality, the lower San Joaquin River is listed for various agricultural pollutants. Because of its listing, TMDLs are being developed for the watershed with three are already established, including chlorpyrifos and diazinon from pesticide use and the mineral selenium. The TMDLs for the remaining pollutants in the San Joaquin River are expected to be released in the near future, since their target dates range from 2004 to 2020. Table 3.8-3 summarizes the TMDLs in effect for the San Joaquin River.

Table 3.8-3: Section 303(d) Pollutants for the San Joaquin River from Its Confluence with Stanislaus River to the Delta Boundary

Pollutant/Stressor	Potential Source	Proposed TMDL Completion Date
Boron	Agriculture	2004
DDT	Agriculture	2011
Electrical Conductivity	Agriculture	2004
Group A Pesticides	Agriculture	2011
Mercury	Resource Extraction	2020
Toxaphene	Source Unknown	2019
Unknown Toxicity	Agriculture	2019
Source: Central Valley Regional Water Quality Control Board, 2006.		

The Central Valley RWQCB's primary function is to protect the quality of waters within the region for all beneficial uses by prescribing and enforcing requirements on all agricultural, domestic, and industrial waste discharges. The Central Valley RWQCB implements the following major programs relevant to San Joaquin County and the proposed project:

1. San Joaquin River Basin Plan. Provides the framework for the Regional Board's activities including designation of beneficial uses of waters, water quality objectives to meet those uses and actions such as water quality standards that are to be implemented to achieve those objectives. The following issues are high priority under the Basin Plan: (1) regulatory guidance to address water bodies dominated by NPDES discharges, (2) regulatory guidance for salinity and boron discharges to the San Joaquin River, (3) organophosphate (OP) pesticide control efforts, (4) mercury load reduction program, (5) dissolved oxygen problems in the San Joaquin River near Stockton, and (6) regulatory policies for selenium in the San Joaquin River.
2. Total Maximum Daily Load (TMDL). Section 303(d) of the Federal Clean Water Act requires the Regional Board to submit lists of impaired water bodies to the EPA for approval. Load reduction plans, defined as TMDLs, are then required to be developed for those water bodies. Elements of a TMDL include a problem statement, numeric target, source analysis, allocations, description of how allocations relate to meeting targets, margin of safety, and monitoring and implementation plan.
3. National Pollutant Discharge Elimination System (NPDES) Program. NPDES discharges can be permitted with an individual permit or covered under a general permit. Individual permits are completed to address specific design and applicable water quality standards to an individual facility, while general permits authorize a category of discharges within a geographical region. The majority of construction sites are permitted under a general NPDES permit. In California, the newly released General NPDES Permit for construction activities that disturb 1 or more acres (Construction General Permit Order 2009-0009-DWQ) goes into effect July 1, 2010, and is described in more detail under the federal regulations section above.
4. Water Quality Certification: By federal law, every applicant for a federal permit for an activity that may result in a discharge into a water body must request state certification that the proposed activity will not violate state and federal water quality standards.

California Department of Water Resources

DWR is a state agency that constructs and operates regional-scale flood protection systems in partnership with USACE and local agencies. DWR provides technical, financial, and emergency response assistance related to flood hazard and safety to local agencies and evaluates maintenance of federal project levees by local reclamation and levee districts.

DWR initiated various studies in support of implementing repairs and improvements to the State Plan of Flood Control in 2008. DWR is developing technical information to assist cities and counties with developing flood protection standards for new development that will be tied to the Central Valley Flood Protection Plan to become effective in 2012. Once adopted, new urban development within a flood hazard zone will be required to show that it is protected from a 1 in 200 chance of flooding. Under Assembly Bill 156, DWR prepared Levee Flood Protection Zone Maps for areas protected by the state–federal project levees in the Central Valley. DWR is also providing Best Available Maps for planning purposes to show the 100- and 200-year floodplains based on best available information. Both types of maps that include the project area are completed and available for public viewing.

Assembly Bill 5 and Senate Bill 17

Central Valley Flood Protection Board

In 2007, Assembly Bill 5 (AB 5) renamed the Reclamation Board the Central Valley Flood Protection Board (CVFPB) and established the board as independent of DWR. CVFPB's directive is to control flooding along the Sacramento and San Joaquin rivers in cooperation with the USACE, to coordinate the establishment, operation, and maintenance of flood control infrastructure with various agencies and to maintain the integrity of the existing flood control system and floodways through authorization of encroachment permits. Senate Bill 17 (SB 17) similarly renamed the agency and directed the DWR to prepare and the CVFPB to adopt a State Plan of Flood Control.

Other provisions to be implemented by DWR under AB 5 that may have relevance to this project include:

- Inspect all project levees, determine whether there are any deficiencies or risks of failure, make recommendations for improvements, and provide in a flood control system status report.
- Prepare maps of levee protection zones by December 31, 2008 and update the maps periodically.
- Notify all landowners whose property are fully or partially within a zone protected by a levee by September 2010 about the risks associated with flooding and provide information regarding flood insurance.
- Impose requirements on local jurisdictions to upgrade levees that protect an area where more than 1,000 people live before any funds are spent, and after July 2008, the local levee maintenance agency and the city or county with jurisdiction over the affected area must sign an agreement to prepare a safety plan within 2 years. DWR is to take over maintenance of any levees it determines are not being maintained according to regulations.

Relevant provisions under SB 17 to be implemented by DWR and CVFPB include:

- Collaborate with local jurisdictions and provide them with flood information and technical assistance.

- Propose updated requirements for construction in areas protected by flood protection facilities and will include requirements for buildings in areas where flood levels during 200-year events are expected to exceed 3 feet.
- Develop preliminary 100- and 200-year floodplain maps based on best available information for lands protected by levees contained in the State Plan of Flood Control and provide those maps to local jurisdictions for planning purposes.
- Prepare the Central Valley Flood Protection Plan for approval by July 2012 and update the plan every 5 years.
- Implement flood protection improvements in urban areas before the Central Valley Flood Protection Plan is completed.

Senate Bill 5

Another key flood management bill recently enacted is Senate Bill 5 (SB 5) that requires San Joaquin County to update its General Plan within two years after the CVFPB adopts the Central Valley Flood Protection Plan to contain the following:

- Location of State Plan of Flood Control facilities, other flood management facilities, and flood hazard zones.
- Feasible implementation measures designed to carry out the goals for protection of lives and property.
- Amend zoning ordinances to be consistent with the General Plan within 36 months of adoption of the Central Valley Flood Protection Plan.

SB 5 prohibits a city or county within the Central Valley Flood Protection Plan area from approving a development agreement, discretionary permit or entitlement, tentative map or parcel map for any property within a flood hazard zone unless the city or county finds, based on substantial evidence one of the following:

- The property is protected by flood management facilities to urban levels of flood protection;
- The city or county has imposed conditions on the development that will protect the property to Central Valley Flood Protection Plan standards or;
- The local flood management agency has made adequate progress on the construction of a flood protection system that will result in flood protection equal or better than standards of the Central Valley Flood Protection Plan.

SB 5 also requires that the urban level of flood protection be achieved for urban and urbanizing areas by 2025.

Assembly Bill 70

Assembly Bill 70 (AB 70) states that local jurisdictions that approve new development in previously undeveloped areas protected by a state flood control project will share liability with the State for any flood damage that occurs to properties in new developments, unless reasonable precautions are taken to protect the development.

FloodSAFE California

FloodSAFE California is a program launched in 2006 by DWR to guide the development of regional flood management plans to better identify and address flood hazards and to improve integrated flood management systems statewide with an emphasis on the Central Valley.

California Dam Safety Act

The State of California Dam Safety Act requires submittal of inundation maps to the California Office of Emergency Services (OES) for any dams whose total failure would result in loss of life or personal injury. This law also requires local jurisdictions to adopt emergency procedures for the evacuation and control of populated areas below such dams. The San Joaquin County OES has a 2003 Dam Failure Plan that includes descriptions of the dams, anticipated direction, timing and depths of floodwaters, and responsibilities of the jurisdictions that would be affected.

Local

San Joaquin Area Flood Control Agency

San Joaquin County Flood Control and Water Conservation District

The San Joaquin County Flood Control and Water Conservation District (District) was established in 1956 to construct, operate, maintain, and design flood control, water supply, drainage, and groundwater recharge projects for San Joaquin County to ensure economic and environmental sustainability of the area.

City of Manteca

General Plan

The City's target level of service is a 10-year storm drainage protection for all development and a 100-year storm drainage protection for all structures. The General Plan requires all stormwater to flow to detention basins in order to control quality and quantity of storm discharges.

The City of Manteca General Plan establishes the following goals and policies related to hydrology, water quality and flood hazard that are applicable to the proposed project:

- **Goal (Major Drainage) PF-9:** Maintain an adequate level of service in the City's drainage system to accommodate runoff from existing and projected development and to prevent property damage due to flooding.
- **PF-P-27:** The City shall require the dedication and improvement of drainage detention basins as a condition of development approval according to the standards of the Drainage Master

Plan. The responsibility for the dedication and improvement of detention basins shall be based on the prorated share of stormwater runoff resulting from each development.

- **Goal S-3:** Prevent loss of lives, injury, and property damage due to flooding.
- **Goal S-4:** Pursue flood control solutions that minimize environmental impacts.
- **S-P-7:** Regulate all uses and development in areas subject to potential flooding through zoning and other land use regulations.
- **Goal S-P-10:** Ensure that any existing structures subject to the 100-year flood provide adequate protection from flood hazards.
- **Goal S-P-11:** Ensure that the impacts of potential flooding are adequately analyzed when considering areas for future urban expansion.
- **S-I-4:** The City shall continue to participate in the National Flood Insurance Program. To this end, the City shall ensure that local regulations are in full compliance with standards adopted by FEMA. The City shall adopt and implement local flood management development standards.
- **S-I-6:** Discourage large continuous paved areas unless provided with engineered drainage facilities.
- **S-I-7:** Where feasible, require the use of pervious paving materials, such as brick or stepping stones with sand joints.
- **S-I-8:** New development shall be required to maintain natural stream courses and adjacent habitat and combine flood control, recreation, water quality and open space functions.
- **Goal (Water Quality) RC-7:** To protect water quality in the San Joaquin River and in the area's groundwater basin.
- **RC-P-11:** Minimize sedimentation and loss of topsoil from soil erosion.
- **RC-P-12:** Minimize pollution of waterways and other surface water bodies from urban runoff.
- **RC-P-13:** Protect the quality of Manteca's groundwater.
- **RC-P-15:** Once sewer service has been extended to incorporated areas, new septic tanks shall not be permitted.
- **RC-I-20:** The City shall not approve new industrial or commercial development that has a significant potential for adversely affecting water quality in the San Joaquin River or in the area's groundwater basin.
- **RC-I-22:** Maintain a buffer area between waterways and urban development to protect water quality and riparian areas.
- **RC-I-23:** Utilize cost-effective urban runoff controls including Best Management Practices (BMPs) to limit urban pollutants from entering the water courses.
- **RC-I-24:** Comply with the RWQCB's regulations and standards to maintain and improve groundwater quality in Manteca.

Stormwater Management Plan

In 2003, the City of Manteca submitted to the Central Valley RWQCB and is now in the stages of implementing a Stormwater Management Plan to fulfill the requirements of General Permit Number

CAS000004; Water Quality Order No. 2003-0005-DWQ issued April 30, 2003. The plan describes six minimum control measures, each with its own set of tasks and applied BMPs established by the State Water Resources Control Board for Phase II stormwater discharges and summarized below.

1. Public Education and Outreach on Stormwater Impacts Program
2. Public Involvement/Participation Program
3. Illicit Discharge Detection and Elimination Program
4. Construction Site Stormwater Runoff Control Program
5. Post-Construction Stormwater Management in New Development and Redevelopment Program
6. Pollution Prevention/Good Housekeeping for Municipal Operations

Municipal Code

The City of Manteca Municipal Code includes several measures regarding stormwater management, flood protection, and water quality. The most relevant measures to the proposed project are summarized below.

Stormwater Management and Water Quality Protection

Section 13.28.010 of the Code establishes minimum stormwater management requirements to protect and safeguard general public health and safety. Objectives include:

- Minimize increases in stormwater runoff from any development in order to reduce flooding, siltation and stream bank erosion and maintain the integrity of drainage channels;
- Minimize increases in non-point source pollution caused by stormwater runoff from development that would otherwise degrade local water quality;
- Minimize the total annual volume of surface water runoff that flows from any specific site during and following development to not exceed the pre-development hydrologic regime to the maximum extent practicable; and
- Reduce stormwater runoff rates and volumes, soil erosion and non-point source pollution wherever possible through stormwater management controls. Ensure that these management controls are properly maintained and pose no threat to public safety.

Section 13.28.060 encourages compliance with construction activity NPDES permits by requiring that proof of compliance may be required as a condition of a subdivision map, site plan, building permit, or development plan and that a copy of the NOI and SWPPP are to be submitted prior to issuance of a construction permit.

Section 13.28.070 includes requirements to prevent, control, and reduce stormwater pollutants.

- The City may adopt requirements identifying appropriate design standards and BMPs to control volume, rate, and potential pollutant load of stormwater runoff from new development projects as may be appropriate to minimize the generation, transport and discharge of pollutants. The City shall incorporate such requirements in any land use entitlement and construction or building-related permits to be issued relative to such development.
- Regardless of any City standardized BMPs, any person engaged in activities or operations or owning facilities or property which may result in pollutants entering stormwater shall implement BMPs to the extent they are technologically achievable to prevent and reduce such pollutants.
- All structural and non-structural permanent stormwater BMPs shall have an enforceable maintenance agreement and shall specify responsible parties to ensure the system functions as designed.

Section 13.28.080 requires that any land area not covered by an impervious surface, where the natural vegetation cover has been disturbed by development activities, shall be landscaped within 10 days from the substantial completion of such clearing and construction. Impervious materials such as plastic are not to be used in meeting the landscaping requirement.

Flood Management

Section 8.30.040 lists methods for reducing flood losses, including:

- Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;
- Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
- Control filling, grading, dredging and other development which may increase flood damage; and
- Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

Section 8.30.130 requires a development permit be obtained from the City floodplain administrator before any construction or other development begins within an area identified as FEMA's Special Flood Hazard Area. Lists of construction standards for development within a FEMA floodplain are provided in Section 8.30.170.

3.8.4 - Methodology

Michael Brandman Associates analyzed the proposed project's potential to cause adverse impacts on hydrology and water quality utilizing several resources. The Western Regional Climate Center provided climate information; the FEMA October 16, 2009 Flood Insurance Rate Map number 06077C0620F provided flood hazard information; and DWR Groundwater Bulletin 118 – 2006 Update provided groundwater information. Documents used for this assessment include the City of Manteca 2003 Stormwater Management Plan and 2023 General Plan, the San Joaquin County 2010 General Plan and newly released Background Reports, the San Joaquin County 2009 Final Stormwater Control Criteria Plan, the San Joaquin County OES 2003 Dam Failure Plan, and Levee Seepage Evaluation – Station 854+00 to 991+31.

3.8.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, hydrology and water quality impacts resulting from implementation of the proposed project would be considered significant if the project at various phases and up to full buildout would:

a) Violate any water quality standards or waste discharge requirements?

b) 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)?

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?

e) 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?

f) Otherwise, substantially degrade water quality?

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

j) Inundation by seiche, tsunami, or mudflow? (Refer to Section 7, Effects Found Not To Be Significant.)

3.8.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Short-Term Water Quality

Impact HYD-1: Construction activities associated with the proposed project have the potential to degrade water quality in downstream water bodies.

Impact Analysis

This impact evaluates short-term water quality impacts.

The proposed project would develop 1,650 residential units on approximately 300 acres north of the dry levee. Construction of the proposed residences would require extensive grading of the project site to construct the buildings and associated parking areas, accompanying open space drainages and detention basins, utility installations, pipeline replacements, internal pathways, and roadways. The majority of project grading would occur within fairly flat agricultural fields north of the levee. Some minor excavation may occur on the portion of the project site south of the levee.

Construction activities and any proposed drainages and detention basins have the potential to directly introduce sediment and other pollutants into surface water and ultimately into the San Joaquin River, potentially degrading water quality. Temporary stockpiles of sediment or other materials also have the potential to erode and be carried into the stormwater system and waterways. Construction activities will likely involve the use of gasoline and diesel-powered vehicles and equipment that pose a potential risk of accidental fuel and related chemical releases that could enter the drainage system and degrade water quality. The extensive trenching activities for various utilities may require dewatering and the need for temporary BMPs to protect water quality during construction. This would be a potentially significant impact.

BMPs will need to be implemented and maintained just before and during any project construction activities to protect surface water in the drainages and the San Joaquin River during all earthwork activities. Any construction project that will result in the disturbance of more than 1 acre is required by the SWRCB to obtain a NPDES Construction General Permit Order 2009-0009-DWQ permit prior to project initiation. As part of the NPDES permit, the project applicant must prepare and implement a SWPPP. The SWPPP must identify potential sources of pollution that are reasonably expected to affect the quality of stormwater discharges and identify, locate, and implement BMPs to ensure reduction of these pollutants during storm events. The SWPPP must include a monitoring plan for either visual or chemical monitoring depending upon the types of pollutants expected.

The City of Manteca Municipal Code Section 13.28.060 also requires that any person subject to a construction activity NPDES stormwater discharge permit shall comply with all provisions of such permit and proof of compliance may be required in a form acceptable to the public works director prior to or as a condition of a building permit or development plan. A copy of the Notice of Intent (NOI) and the SWPPP must be submitted to the RWQCB electronically, and a copy of SWPPP must be submitted to the City of Manteca.

By implementing and maintaining proper BMPs, the potential for short-term sediment introduction should be minimized.

Mitigation is proposed that would require the project applicant to prepare and implement SWPPP for the proposed project for review and approval by the City of Manteca prior to the issuance of grading or building permits. The SWPPPs shall include specific measures to protect the onsite and offsite drainages and waterways during construction of the individual proposed developments. The implementation of the mitigation measure would ensure that potential, short-term, water quality impacts from construction of each project are reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-1 Prior to the issuance of grading permits, the project applicant shall prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) to the RWQCB electronically and a copy to the City of Manteca that identifies specific actions and Best Management Practices (BMPs) to prevent stormwater pollution during construction activities. The SWPPP shall identify a practical sequence for BMP implementation, monitoring, and maintenance; site restoration; contingency measures; responsible parties; and agency contacts. The SWPPP shall include but will not be limited to the following elements:

- Temporary erosion control measures shall be employed for disturbed areas.
- Specific measures shall be identified to protect the onsite open drainages during construction of the proposed project.
- No disturbed surfaces shall be left without erosion control measures in place during the winter and spring months.
- Sediment shall be retained onsite by a system of sediment basins, traps, or other appropriate measures.
- The construction contractor shall prepare Standard Operating Procedures for the handling of hazardous materials on the construction site to eliminate or reduce discharge of materials to storm drains.
- BMP performance and effectiveness shall be determined either by visual means where applicable (e.g., observation of above-normal sediment release),

or by actual water sampling in cases where verification of contaminant reduction or elimination (such as inadvertent petroleum release) is required by the RWQCB to determine adequacy of the measure.

- In the event of significant construction delays or delays in final landscape installation, native grasses or other appropriate vegetative cover shall be established on the construction site as soon as possible after disturbance, as an interim erosion control measure throughout the wet season.

Level of Significance After Mitigation

Less than significant impact.

Long-Term Water Quality

Impact HYD-2:	**Operational activities associated with the proposed project have the potential to degrade water quality in downstream water bodies.**

Impact Analysis

This impact evaluates long-term water quality impacts.

The proposed project would develop 1,650 residential units on approximately 300 acres north of the dry levee. Development of the proposed project would convert roughly 300 acres of existing agricultural fields to residential uses, including impervious coverage associated with buildings, roadways, parking areas, and pathways. This substantial increase in impervious coverage would generate increased stormwater runoff and a greater potential for discharge of urban stormwater pollutants such as heavy metals, oil and grease, and sediment into nearby surface water bodies—including the Walthall Slough—over the life of the project. This would be a potentially significant impact.

Mitigation is proposed that would require the project applicant to prepare and submit a stormwater quality control plan to the City of Manteca for review and approval that would demonstrate adequate water quality protection prior to issuance of building or grading permits. The plan would be required to document the expected target pollutants and types of treatments that would be required to address those pollutants during operation. The expected polluted runoff from paved roadways and proposed treatment should be included in the plan. The plan would also describe any monitoring effort and performance measures required and what entity would provide oversight to ensure that stormwater quality is sufficiently treated so it will not to impede downstream detention basin performance or degrade water quality downstream.

The implementation of these mitigation measures would ensure that potential, long-term, operational water quality impacts are reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-2 Prior to the issuance of building permits, the project applicant shall submit a stormwater quality control plan to the City of Manteca for review and approval. The plan shall include a detailed drainage plan and identify expected, site-specific pollutants and required measures to treat those pollutants before they reach the regional detention basins and, ultimately, the San Joaquin River. The approved measures shall be incorporated into the proposed project. The plan will describe monitoring and performance measures and standards required in order to ensure water quality is adequately protected during operation of the project area. Examples of stormwater pollution prevention measures and practices to be incorporated into the plan include but are not limited to:

- Strategically placed bioswales and landscaped areas that promote percolation of runoff
- Pervious pavement
- Roof drains that discharge to landscaped areas
- Trash enclosures with screen walls and roofs
- Stenciling on storm drains
- Curb cuts in parking areas to allow runoff to enter landscaped areas
- Rock-lined areas along landscaped areas in parking lots
- Catch basins
- Oil/water separators
- Regular sweeping of parking areas and cleaning of storm drainage facilities

Level of Significance After Mitigation

Less than significant impact.

Groundwater

Impact HYD-3:	**The proposed project would not deplete groundwater supplies or substantially interfere with groundwater recharge.**

Impact Analysis

This impact evaluates potential impacts on groundwater supplies and recharge.

The project area currently experiences some groundwater recharge from precipitation and infiltration in the existing agricultural fields.

The project site is located in the Eastern San Joaquin Subbasin. As stated earlier, groundwater levels in Eastern San Joaquin County have been in decline, due to overdraft, and there is a significant cone of depression east of Stockton and northeast of the project area. There may be some contribution from the site in support of agricultural or domestic uses, but there are no onsite or nearby domestic wells that would be directly affected.

There would be a measurable decrease in immediate recharge that is due to construction of impervious surfaces within the 300-acre development area; however, the project would include landscaping, detention ponds, and open channel swale that would maintain local recharge capabilities. In addition, the proposed project does not include development on approximately 177 acres south of the levee. The specific volume, location, and seasonal timing of recharge would vary from existing conditions, but the net local effect would not be expected to adversely impact overall groundwater supply in the area; therefore, this project does not have the potential to significantly interfere with groundwater recharge.

The proposed project would be served with potable water for domestic purposes, irrigation, and fire flow from the City of Manteca, through the City's Municipal Well System and an agreement with SSJID for treated surface water. A water supply assessment will be provided by the City of Manteca in order to determine if upgrades to the City's water supply would be needed to accommodate the proposed development. If it is determined at that time that a new water supply well is needed in the project area, the City will determine the proper location, and any water system improvements will comply with City master plans and public facilities implementation plan. The proposed project has the potential to contribute to groundwater overdraft; however, because the City will be conducting a more in-depth analysis under the water supply assessment task and is an active participant in managing and restoring the regional groundwater basin under the Eastern San Joaquin Integrated Conjunctive Use Program, it is considered less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Drainage

Impact HYD-4: **The proposed project would increase impervious surface coverage, which may result in increased stormwater runoff volumes and peak flows.**

Impact Analysis

This impact addresses the potential for development activities to increase runoff and susceptibility to downstream flooding and/or erosion that is due to increased volumes or peak flows.

This impact focuses on hydrologic changes that are due to increases in stormwater runoff generated by the proposed project. The proposed project would increase stormwater runoff generated onsite as a result of increased impervious surfaces associated with buildings, paved roadways, pathways, and parking areas. This increase in stormwater runoff could result in flooding and erosion problems.

To counteract the increase in stormwater runoff, the proposed project would have as a mandatory requirement a predetermined layout of open space containing a series of drainage swales and detention basins that would collect stormwater conveyance, provide holding capacity, and diminish peak flows.

Unless a drainage plan is designed and implemented properly, runoff volumes and peak flows generated on the developed project site could increase significantly and potentially cause erosion, sedimentation, ponding, or flooding along natural and constructed drainages both on- and offsite. The project proponent should implement a plan that would keep the volume of runoff equal to or less than existing conditions in order to avoid these potential impacts.

To ensure that such a system is implemented, mitigation is proposed requiring the project applicant, as part of the stormwater quality control plan under Mitigation Measure HYD-2, to include a drainage plan that demonstrates attainment of pre-project runoff volumes and peak flows prior to release at the outlet canal and describes the volume reduction measures and treatment controls used to reach attainment. With the implementation of this mitigation measure, drainage impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-4 Prior to the issuance of building or grading permits for the proposed project, the project applicant shall submit a drainage plan for the project as a whole to the City of Manteca for review and approval. The plan shall include a detailed drainage plan that demonstrates attainment of pre-project runoff requirements prior to release at the outlet canal and describes the volume reduction measures and treatment controls used to reach attainment. The drainage plan shall identify all expected flows from the project area and the location, size, and type of facilities used to retain and treat the runoff volumes and peak flows to meet pre-project conditions. The Drainage Plan shall also include the geotechnical report verifying groundwater elevation for the regional basins. In addition, the plan shall address the need for subsurface drainage system located between the levee and the subdivision to control this water during a high water stage event. The approved drainage plan shall be incorporated into the proposed project.

Level of Significance After Mitigation

Less than significant impact.

100-Year Flood Hazards

Impact HYD-5:	**The proposed project may place structures within a 100-year flood hazard area that may have the potential to divert flood flows or to be subjected to flood hazard.**

Impact Analysis

This impact evaluates the potential for the proposed projects to locate structures within a 100-year flood hazard area.

Approximately 177 acres south of the levee lie within the 100-year flood zone. However, this portion of the project site will be left as open space and no habitable structures are proposed to be built on it. The portion of the project site north of the levee is within the limits protected from the 100-year flood by a provisionally accredited levee. In the case of the levee protected portion, if data and documentation yet to be submitted to FEMA fail to demonstrate that the levees in the area are adequate for 100-year level flood protection, this area could potentially be included in the designated 100-year floodplain in the near future. This would be a potentially significant impact.

Furthermore, it is also important to note that the recent and more stringent state floodplain legislation for the San Joaquin River region will result in stricter building standards in the near future. For example, urban areas that reside behind levees are required to have a 200-year level of flood protection by the year 2012 when the Central Valley Flood Protection Plan is adopted. According to the DWR Best Available Map, the portion of the project site north o the levee is susceptible to a 200-year level flood.

As such, Mitigation Measures HYD-5a and HYD-5b require the project applicant to verify the floodplain status of the project site prior to issuance of grading permits. If proposed structures would be located with floodplains, the applicant would be required to raise them to above the flood elevation. With the implementation of these mitigation measures, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-5a Prior to the issuance of grading permits, the project applicant must revisit the status of the provisionally accredited levees providing 100-year level of flood protection to the project area to determine it is still the case and the project site remains outside of the 100-year flood hazard. If development is proposed within a 100-year floodplain, the applicant shall revise project plans to raise all structures a minimum of 1 foot above the flood elevation.

MM HYD-5b Prior to the issuance of grading permits, the project applicant shall either demonstrate that the developed portions of the project site are outside of the anticipated 200-year

flood hazard area or incorporate measures into the proposed project to achieve a 200-year level of flood protection for any site installations.

Level of Significance After Mitigation

Less than significant impact.

Levee or Dam Failure

Impact HYD-6: The proposed project may 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.

Impact Analysis

This impact addresses flooding from levee or dam failure.

Levee Failure

As discussed previously, the portion of the project site north of the levee is within the limits protected from the 100-year flood by a provisionally accredited levee; therefore, there is a chance that flooding could occur in the area if the levees were to fail.

The current grading plan for the proposed project includes placing approximately 3 feet of engineered fill at the landside toe adjacent to the proposed development. In addition, there are several areas where proposed streets, residential pads, and basins are located adjacent to the levee toe within Reaches A and B. Therefore, additional seepage analyses were performed in seven locations where Engeo, Inc. determined the most critical seepage conditions would occur. The results of the analyses are summarized in Table 3.8-4.

Table 3.8-4: Proposed Gradient Conditions

Reach	Approximate Limits	Exit Gradient	Comments
A	856+00 Basin Full	0.38	The free water surface level is below toe of levee
A	856+00 Basin Full	0.66	The free water surface level is below toe of levee
A	868+00	0.39	The free water surface level is below toe of levee
A	881+00 Basin Empty	0.23	The free water surface level is below toe of levee
A	887+00 Basin Empty	0.28	The free water surface level is below toe of levee
A	900+00	0.27	The free water surface level is below toe of levee
B	912+00	0.13	The free water surface level is below toe of levee
B	925+00	0.22	The free water surface level is below toe of levee
Source: Engeo, Inc., 2009.			

Based on the results of Engeo, Inc.'s analysis, once the mass grading of the project is complete, Reaches A, B, and D will have acceptable exit gradients, provided that the basin located at Station 856+00 remains full during a high water stage event. The free water surface level is located below

the toe of the slope for Reaches A, B, and D. Reach C will require improvement to mitigate through-seepage.

Based on the analysis, groundwater will manifest itself at the surface at various distances from the levee within the subdivision. Engeo recommended that consideration be given to providing a subsurface drainage system located between the levee and the subdivision to control this water during a high water stage event. This recommendation is included in Mitigation Measure HYD-4.

It should be noted that in areas where seepage has been known to occur (evident by historic documents and/or sand boils), the USACE requires the installation of a seepage berm with a width equal to four times the height of the levee at that particular location. During the 1997 flood, low levels of under-seepage were observed; no sand boils were observed, though there was standing water. Further, no through-seepage was observed during the 1997 storm event. Some seepage is normally anticipated during flood-stage water levels. According to Engeo, Inc., seepage observed during the 1997 flood does not constitute the need for historic seepage mitigation.

In summary, the proposed grading activities would reinforce the levee and the implementation of Mitigation Measure HYD-4 would ensure that groundwater does not undermine the levee. Therefore, impacts would be less than significant.

Dam Failure

According to dam inundation maps, the entire project area could be flooded from partial or complete failure of the New Melones Dam on the Stanislaus River in Calaveras County, and by failure of the San Luis Dam in Merced County. Because of adherence to federal and state dam safety and structural requirements, the likelihood of dam failure is considered extremely low. In addition, in response to the risk, the FloodSAFE California program is guiding development of regional flood management plans to improve integrated flood management systems, particularly in the Central Valley, and the San Joaquin County Office of Emergency Services has developed the Dam Failure Plan that includes responsibilities and actions of the various jurisdictions affected and continues to work with local jurisdictions to improve the plan. Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure HYD-4.

Level of Significance After Mitigation

Less than significant impact.

3.9 - Land Use

3.9.1 - Introduction

This section describes the existing land use and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on site reconnaissance performed by Michael Brandman Associates personnel and review of the City of Manteca General Plan, the Manteca Municipal Code, and the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.

3.9.2 - Environmental Setting

Land Use

Project Site

The 477-acre project site contains agricultural uses. A dry levee that runs from S. Woodward Avenue east to Airport Way bisects the property. Approximately 300 acres lie north of the levee and the remaining 177 acres lie south of the levee. The levee is under the jurisdiction of Reclamation District 17.

The area north of the levee contains row crops, an almond orchard, and several structures. The structures are located approximately 300 feet west of the eastern project boundary and consist of several dilapidated agricultural and residential buildings, including a barn, storage shed, mobile home, and related buildings. Unpaved roads connect the structures with E. Woodward Avenue and the nearby fields and orchards. Irrigation ditches lie along E. Woodward Avenue and S. Woodward Avenue and cross the property in several other locations.

The area south of the levee contains row crops, unpaved roads, and irrigation ditches. No structures are located in this area.

The project site is mapped as containing 374.35 acres of "Prime Farmland" and 99.72 acres of "Farmland of Statewide Importance." Both designations fall under the "Important Farmland" umbrella as classified by the California Department of Conservation Farmland Mapping and Monitoring Program.

The project site is encumbered by an active Williamson Act contract that dates to 1976. The property owner filed a Notice Non-Renewal in November 2005 to initiate termination of the contract. The property owner subsequently filed a Petition for Cancellation of Contract with the City of Manteca in March 2009.

Exhibits 2-3a and 2-3b provide photographs of the project site.

Surrounding Area

West

S. Woodward Avenue, a two-lane undivided roadway, forms the western boundary of the project site. Land uses further to the west of S. Woodward Avenue include the Islander Mobile Home Park, Weatherbee Lake, and several single-family dwelling units.

North

The project site is bounded by E. Woodward Avenue, a two-lane undivided roadway, to the north. Land uses north of E. Woodward Avenue include the Oakwood Shores single-family residential development (which occupies the former Manteca Waterslides site) and agricultural uses consisting of row crops.

East

Agricultural uses consisting of row crops are located to the east of the project site.

South

Agricultural uses and Walthall Slough, a tributary to the San Joaquin River, form the southern boundary of the project site. Land uses further south include agricultural uses consisting of row crops.

Land Use Designations

Project Site

The City of Manteca General Plan designates the project site as "Urban Reserve-Low density Residential" (UR-LDR), "Urban Reserve - Very Low Density Residential" (UR-VLDR), and "Open Space" (OS). The Manteca Zoning Ordinance designates the project site as "Planned Employment Center (PEC)."

The project area is within the boundaries of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.

Surrounding Land Uses

Table 3.9-1 summarizes the land use and zoning designations for the project site and the surrounding area.

Table 3.9-1: Land Use and Zoning Designations

Land Use	Relationship to Master Plan Area	Jurisdiction	Land Use Designation	
			General Plan	Zoning
Islander Mobile Home Park	West	County of San Joaquin	General Agriculture[1]	General Agriculture – 40-acre minimum parcel size[2]
Single-family homes (Weatherbee Lake Subdivision)	West	County of San Joaquin	General Agriculture[1]	General Agriculture – 40-acre minimum parcel size[2]

Table 3.9-1 (cont.): Land Use and Zoning Designations

Land Use	Relationship to Master Plan Area	Jurisdiction	Land Use Designation	
			General Plan	Zoning
Oakwood Shores Residential Development	North	County of San Joaquin	Commercial Recreation[1]	Commercial Recreation[2]
Agriculture	North	City of Manteca	Low Density Residential	Planned Employment Center
Agriculture	East	City of Manteca	Urban Reserve-Business Industrial Park	Planned Employment Center
Agriculture	East	City of Manteca	Open Space	Planned Employment Center
Agriculture	South	County of San Joaquin	General Agriculture[1]	General Agriculture – 40-acre minimum parcel size[2]
Walthall Slough	South	County of San Joaquin	Resource Conservation[1]	General Agriculture – 40-acre minimum parcel size[2]

Notes:
[1] County of San Joaquin General Plan designation
[2] County of San Joaquin zoning designation
Source: City of Manteca, 2010; County of San Joaquin, 2010.

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) provides a strategy for balancing the desires to conserve open space, maintaining the agricultural economy, and allowing development in San Joaquin County. The City of Manteca is a signatory to the SJMSCP. The portion of the project site north of the levee is designated "Other open Spaces" and "Agricultural Habitat" by the SJMSCP. The portion of the project site south of the levee is designated "Agricultural Habitat" by the SJMSCP.

3.9.3 - Regulatory Framework

The land use planning and zoning authority of local jurisdictions in California are set forth in the state's planning laws.

State

General Plans

California Government Code Section 65300, et seq. establish the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of a city or county and of any land outside its boundaries that, in the city's or county's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including, at a minimum, land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the

city's or county's vision for the area. The general plan is a long-range document that typically addresses the physical character of an area over a 20-year period. Although the general plan serves as a blueprint for future development and identifies the overall vision for the planning area, it remains general enough to allow flexibility in the approach taken to achieve the plan's goals.

Zoning

The State Zoning Law (California Government Code Section 65800, et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific district, are required to be consistent with the general plan and any applicable specific plans. When amendments to the general plan are made, corresponding changes in the zoning ordinance may be required within a reasonable time to ensure the land uses designated in the general plan would also be allowable by the zoning ordinance (Government Code, Section 65860, subd.(c)).

Local

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP)

The SJMSCP provides a strategy for balancing the desire to conserve open space, maintain the agricultural economy, and allow development in San Joaquin County. It was developed to avoid, minimize, and mitigate impacts on plant and wildlife habitat projected to occur in San Joaquin County between 2001 and 2051, resulting from the anticipated conversion of as much as 109,300 acres of open space land to uses other than open space uses. Ninety-seven species are covered by the SJMSCP, which is intended to provide comprehensive mitigation, in accordance with local, state, and federal regulations, for impacts on these species from SJMSCP-permitted activities. The United States Fish and Wildlife Service (USFWS) and the Department of Fish and Game participated in development of the SJMSCP, approved the mitigation, and agreed to issue incidental take permits for species and activities covered by the SJMSCP.

Participation in the SJMSCP confers authorization for activities that result in (or may result in) incidental take of covered state-listed or federally listed species, as well as other covered but unlisted sensitive species that may otherwise require a federal or state incidental take authorization.

The approach of the SJMSCP is to minimize the potential for take through implementation of take avoidance and minimization measures and compensation for incidental take and habitat conversion through payment of fees (or in-lieu land dedication) for conversion of open space lands. These fees shall be used to preserve and create natural habitats to be managed in perpetuity through the establishment of habitat preserves.

Participation in the SJMSCP is voluntary for local jurisdictions and project proponents. The City of Manteca adopted the SJMSCP on February 5, 2001, and has signed the implementation agreement. As a result, a Section 10(a)(1)(B) permit was issued by the USFWS to the City of Manteca. This Section 10 permit also constitutes a special-purpose permit for species covered by the federal Migratory Bird Treaty Act. A Section 2081 permit was also issued by the Department of Fish and

Game to the City of Manteca. As a result of the City of Manteca's participation in the SJMSCP and issuance of these permits, project proponents within the City of Manteca's jurisdiction have the opportunity to seek coverage under the SJMSCP. Coverage under the SJMSCP would fully mitigate all impacts on special-status wildlife species addressed in this section. Impacts on sensitive habitats (e.g., waters of the United States) and protected trees are not covered by the SJMCSP.

Compensation for significant impacts on all SJMSCP-covered species would be accomplished through payment of development fees for conversion of open space lands that may provide habitat for these species. These fees would be used to preserve and/or create habitat in preserves to be managed in perpetuity. Development fees would be paid to the San Joaquin Council of Governments (SJCOG) in the amount specified by the SJCOG, which administers the SJMCSP. Development fees for the SJMSCP are continually being revised; therefore, a specified amount cannot be provided at this time. In addition, incidental take avoidance and minimization measures for species that could be significantly affected as a result of the project would be implemented, as determined by the SJCOG, and in accordance with requirements of the SJMSCP.

City of Manteca

General Plan

The City of Manteca General Plan provides a blueprint for growth within the Manteca city limits and sphere of influence. The Manteca City Council adopted the most recent General Plan in October 2003. The General Plan contains eleven topical elements: Land Use, Community Design, Circulation, Economic Development, Public Facilities and Services, Safety, Resource Conservation, Noise, Air Quality, Administration and Implementation, and Housing. Each element establishes goals and policies to guide future land use activities and development within the General Plan boundaries.

Urban Reserve

Urban Reserve is applied to many properties around the perimeter of the City. In most instances, the Urban Reserve category overlies another land use category. In these instances, the underlying land use is the intended use when the land is ultimately annexed to the City. Urban Reserve with no underlying land use indicates that the City intends to expand in the time horizon beyond the current General Plan and that it is premature to indicate a specific future land use in this area. Urban Reserve is shown on the Land Use Map to the north and east of the proposed growth areas.

Very-Low Density Residential

The Very Low Density Residential land use category will provide for residences on larger lots and small, quasi-agricultural activities, including raising and boarding livestock. Residential units shall be permitted to deviate from standard lot dimensions within agricultural areas in order to cluster dwellings together and thereby allow for continued agricultural use. The agricultural use areas that remain on the residential parcel shall be subject to an easement dedicated to the City that allow continued agricultural use, but prohibits any further non-agricultural related development.

Low Density Residential

The Low Density Residential land use will establish a mix of dwelling unit types and character determined by the individual site and market conditions. The density range of 2.1 to 8.0 dwelling units per gross acre allows substantial flexibility in selecting dwelling unit types and parcel configurations to suit particular site conditions and housing needs. The type of dwelling units anticipated in this density range includes small lots and clustered lots as well as conventional large lot detached residences.

Open Space

The Open Space category encompasses habitat, open space, natural areas, lands of special status species, wetlands, and riparian areas. These areas are set aside as permanent open space preserves to protect environmentally sensitive areas.

Proposed Land Uses

The project applicant is proposing to re-designate the project site to Single-Family Residential, Multiple-Family Residential, and Open Space land uses. The General Plan describes the purpose and intent of these land use designation as follows:

Low Density Residential

The Low Density Residential land use will establish a mix of dwelling unit types and character determined by the individual site and market conditions. The density range of 2.1 to 8.0 dwelling units per gross acre allows substantial flexibility in selecting dwelling unit types and parcel configurations to suit particular site conditions and housing needs. The type of dwelling units anticipated in this density range includes small lots and clustered lots as well as conventional large lot detached residences.

High Density Residential

The high-density residential use includes multi-family apartment style housing. The density range is 15.1 to 25 dwelling units per acre. The multi-family dwelling sites are typically located with direct access to arterial streets. The sites have access to the pedestrian and bikeway network along the street corridor and are located along the conceptual route of a public transportation shuttle route. Most sites are near a neighborhood park and a neighborhood commercial center or larger commercial facility.

Open Space

The Open Space category encompasses habitat, open space, natural areas, lands of special status species, wetlands, and riparian areas. These areas are set aside as permanent open space preserves to protect environmentally sensitive areas.

Municipal Code

The City of Manteca Municipal Code provides regulation of land and structures in order to promote health, safety, and welfare of the public, and to insure the orderly development of the City. Chapter 17, Zoning, describes where specific allowed uses, such as residential development, may be located.

The Manteca Zoning Ordinance designates the project site "Planned Employment Center (PEC) District."

Proposed Zoning

To establish consistency with the General Plan, rezoning of parcels from the Planned Employment Center (PEC) to Single-Family Residential (R-1), Multiple-Family Residential/Institutional (R-4), Open Space (O-S), with Planned Development (PD) is proposed. The primary purpose of the PD overlay district is to encourage and facilitate the creative and innovative use of land that may otherwise be limited or prohibited by the standard provisions of this title. The PD combining district is designed to allow diversity in the relationship between buildings and open spaces to create interesting physical environments and to maximize the development potential of underutilized or problematic land areas.

3.9.4 - Methodology

Michael Brandman Associates (MBA) evaluated the potential for land use impacts through site reconnaissance and review of applicable land use policy documents. MBA personnel performed site reconnaissance on the project site and surrounding land uses in August 2010. Photographs were taken of the project site and surrounding land uses to document existing conditions. MBA reviewed the City of Manteca General Plan, the Manteca Municipal Code, and the SJMSCP to identify applicable policies and provisions that pertain to the proposed project.

3.9.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, land use impacts resulting from the implementation of the proposed project would be considered significant if the project would:

a) Physically divide an established community?

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

c) Conflict with any applicable habitat conservation plan or natural communities conservation plan?

3.9.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Division of an Established Community

Impact LU-1:	The proposed project would not physically divide an established community.

Impact Analysis

This impact addresses the potential for the proposed project to divide an established community.

The proposed project would encompass approximately 477 acres of land currently used for agricultural uses. Several existing agricultural and residential structures are clustered in the center of the project site. Given the small number of people who reside in these structures (i.e., less than five persons), the removal of the existing uses and development of the proposed project would not constitute the division of an established community.

There is an unpaved road on top of the levee that crosses the project site from west-to-east. However, this road is gated at S. Woodward Avenue and, therefore, is not accessible to the public. Furthermore, the levee and associated road would be maintained by the proposed project. Therefore, the development of the proposed project would not sever a linkage between established communities.

Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

General Plan Consistency

Impact LU-2:	The proposed project would be consistent with applicable provisions of the City of Manteca General Plan.

Impact Analysis

This impact addresses the potential for the proposed project to conflict with the City of Manteca General Plan.

The proposed project's consistency with the City of Manteca will be assessed in three separate ways:

- Consistency with the General Plan's amendment criteria
- Consistency of the project's proposed uses with the stated provisions for those uses in the General Plan
- Consistency of the proposed project with applicable goals and policies set forth in the General Plan

General Plan Amendment Criteria

The proposed project requires a General Plan Amendment to re-designate the project site from Urban Reserve Very Low Density Residential (UR-VLDR), Urban Reserve Low Density Residential (UR-LDR), and Open Space (OS) to Low Density Residential, High Density Residential, and Open Space.

The proposed General Plan Amendment would be consistent with widely accepted planning principles of facilitating logical and orderly growth, ensuring compatibility with surrounding uses, and ensuring consistency with the goals and policies of the General Plan. Each of these planning principles is evaluated below.

- **Logical and orderly growth:** The project site is within City of Manteca's urban limits and is anticipated to be developed in the future. The proposed General Plan amendment is part of a comprehensive planning process, which serves to implement the City of Manteca General Plan. The proposed project identifies goals, principles, mandatory requirements, and design standards and guidelines. As such, the proposed project would facilitate logical and orderly growth.
- **Compatibility with surrounding land uses:** The project site is surrounded by residential uses to the west and north, and agricultural uses to the north, east, and south. The proposed project proposes residential development on the approximately 300 acres of the project site that is north of the dry levee. This area is east and south of existing residential land uses. The remaining 177 acres of the project site that lies between Walthall Slough and the dry levee would remain as agricultural and open space uses that would be compatible with the slough and the nearby agricultural uses to the east and south. For these reasons, the proposed project would be compatible with surrounding land uses.
- **Consistency with goals and policies of the General Plan:** The proposed project is consistent with applicable goals and policies of the General Plan. Table 3.9-2 provides a consistency determination.

Proposed Uses

The proposed project proposes Low Density Residential, High Density Residential, and Open Space land uses. The proposed project will include a residential development, including 1,178 single-family residences, 192 townhomes/garden apartments, and 280 apartments. The project would incorporate a trail system throughout the site of over 12 miles that will eventually connect to the City facilities. Approximately 177 acres of the project site that lie south of the dry levee will not be developed with any structures.

Single-family houses account for approximately 65 percent, apartment and townhomes account for approximately 8 percent, and open space accounts for 27 percent of the 300-acre project area.

The General Plan establishes a density of 2.1 to 8.0 dwelling units per acre for Low Density land use, and a density of 15.1 to 25 dwelling units per acre for High Density land use. The proposed project contemplates development of 1,178 Low Density dwelling units on 181 acres, thus establishing a density of 6.5 dwelling units per acre. Up to 472 High Density dwelling units are proposed on 22.3 acres, resulting in a density of 21.1 dwelling units per acre. Therefore, the proposed project conforms to the General Plan densities.

In summary, the proposed project is consistent with the proposed land use designations. Impacts would be less than significant.

General Plan Goals and Policies

Table 3.9-2 summarizes the proposed project's consistency with the applicable goals and policies of the General Plan. As shown in the table, the proposed project would be consistent with all applicable goals and policies of the General Plan. Impacts would be less than significant.

Table 3.9-2: General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
2 – Land Use	Goal LU-1	To provide for orderly, well-planned, and balanced growth consistent with the limits imposed by the city's infrastructure and the city's ability to assimilate new development.	**Consistent:** The proposed project contains provisions that address land use, design, infrastructure, and phasing to ensure that development occurs in a logical, orderly, and planned manner. This would ensure that the proposed Planned Development is served by adequate services and infrastructure and does not unduly burden the City of Manteca.
	Policy LU-P-1	Growth shall mitigate its own impacts and shall provide a positive benefit to the City of Manteca.	**Consistent:** The proposed project would provide the full cost of necessary onsite infrastructure and utility improvements and would provide development fees to public service providers. The proposed project would provide new residential opportunities and generate new property tax revenues that would accrue to the City of Manteca. As such, the proposed project is anticipated to provide a positive benefit to the City of Manteca. Refer to Section 3.12, Public Services and Utilities for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy LU-P-2	Growth must contribute to a strong diversified economic base and an effective balance between employment and housing opportunities for all income levels.	**Consistent:** The proposed project would offer a diversity of housing choices that would cater to various population segments. This would contribute to a strong diversified economic base and an effective balance between employment and housing opportunities.
	Policy LU-P-3	The City shall encourage a pattern of development that promotes the efficient and timely development of public services and facilities.	**Consistent:** The proposed project contains provisions that address land use, design, infrastructure, and phasing to ensure that development occurs in a logical, orderly, and planned manner. This would ensure that the proposed project is served by adequate services and infrastructure and does not unduly burden the City of Manteca. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy LU-P-4	The City shall encourage a development pattern that is contiguous with the boundary of the City.	**Consistent:** The project site is within the existing Manteca city limits.
	Policy LU-P-12	The City will encourage the use of specific plans as needed to ensure orderly, well-planned growth.	**Consistent:** Although the proposed project is not a specific plan, the proposed Planned Development overlay is consistent with the objective of using a comprehensive land use plan to guide urban development in an orderly, well-planned manner.
	Goal LU-2	To provide adequate land in a range of densities to meet the housing needs of all income groups expected to reside in Manteca, and to regulate residential growth consistent with the capacities of City facilities and services and the ability of the community to assimilate new development.	**Consistent:** The proposed project provides a mix of residential densities, including single-family detached units, townhome/garden apartments, and apartments. Units will be available for sale or rental. This is consistent with the objective of providing a variety of housing types for all segments of the community. Furthermore, adequate public services would be available to serve the proposed project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy LU-P-14	The City shall promote the development of a variety of housing types and prices to meet the needs of all households, including very	**Consistent:** The proposed project offers a variety of housing choices, ranging from single-family homes to apartments for diverse income groups.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
		low-, low-, and moderate-income households.	
	Policy LU-P-15	Higher density housing shall be located in areas served by the full range of urban services, preferably along collector and arterial streets, and within walking distance of shopping areas.	**Consistent:** The proposed project would locate the highest density multi-family uses in the northeastern portion of the project site, near E. Woodward Avenue and the future Atherton Drive extension.
	Policy LU-P-40	Development shall be managed to ensure that adequate public facilities and services, as defined in the Public Services and Facilities Element, are planned and provided.	**Consistent:** The proposed project contains provisions for public facilities and services. In addition, the proposed project would provide the full cost of necessary onsite infrastructure and utility improvements and would provide development fees to public service providers. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal LU-6	Provide open space as a framework for the city, and meet the active and passive recreational needs of the community.	**Consistent:** The proposed project would incorporate a trail system throughout the site of over 12 miles that will eventually connect to the City facilities. The proposed project also includes over 75 acres of linear parks and a clubhouse to provide recreational opportunities to its residents.
	Policy LU-P-41	The City shall encourage the continuation of agricultural uses on lands within the Primary and Secondary Urban Services Boundary lines pending their development as urban uses consistent with the General Plan.	**Consistent.** The project site was annexed into the city limits in 1996. As such, the City previously contemplated the conversion of the project site from agricultural to urban use. In the event that the proposed project is delayed or developed in phases, there are no restrictions that prevent the continuation of agricultural activities on the project site until urban development is imminent.
	Policy LU-P-42	The City will encourage the continuation of small, specialty agricultural operations and demonstration or educational agricultural operations that are compatible with the adjacent urban uses.	**Consistent.** The 177-acre portion of the project site that is located south of the dry levee is proposed to remain in agricultural production. This is consistent with the policy objective of allowing compatible agricultural uses to coexist adjacent to urban uses.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy LU-P-43	The City shall promote the provision of both public and private open space within urbanized Manteca to provide visual contrast with the built-environment and to provide for the recreational needs of Manteca residents. Private open space shall not be considered for public use, other than as visual open space, and shall not be constrained from other uses as identified in the General Plan, unless as provided for by agreement with the land owner.	**Consistent.** The proposed project includes trails and parks that serve recreational needs. This is consistent with the objective of maximizing the potential for open space and recreational opportunities.
	Goal LU-7	Reinforce land use and development patterns that encourage walking and the use of public transit within the community.	**Consistent.** The proposed project would be accessible to public transit and would provide bicycle and pedestrian facilities. This is consistent with the objective of reinforcing development patterns that encourage walking and public transit.
	Policy LU-P-46	The City shall allow for higher density housing opportunities along major streets so as to provide residents with access to the public transit system.	**Consistent.** As shown in Exhibit 2-4, the highest density multi-family uses are located in the northeastern portion of the project site, near E. Woodward Avenue and the future Atherton Drive extension. Bus service is anticipated to be provided to the project vicinity as the area builds out. This is consistent with the objective of providing accessibility to the public transit system.
	Policy LU-P-47	The City shall develop and apply standards for pedestrian circulation that enable residents to select a reasonably direct and safe pedestrian route to schools, parks, transit stops and commercial services.	**Consistent.** The proposed project provides an internal circulation network, including roadways and pedestrian facilities to allow for efficient movement. This is consistent with the objective of providing safe circulation routes for pedestrians.
	Policy LU-P-48	Storm drainage systems within new development areas should include open drainage corridors, where feasible, that would provide bike and pedestrian paths, and visual	**Consistent.** The proposed project identifies necessary drainage improvements to ensure that adequate storm drainage is provided. These improvements include the use of

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
		open space within neighborhoods. The pedestrian connection should link parks and open space to residential neighborhoods.	detention basins that also serve as open space and recreational facilities.
	Goal LU-8	To reinforce strong urban design	**Consistent.** The proposed project contains design standards and guidelines that ensure quality development with limited visual impacts. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy LU-P-49	The City shall give priority to in-fill development and new development contiguous to existing developed areas, whenever practical.	**Consistent.** The project site is contiguous to the existing Oakwood Shores and Islander Mobile Home Park developments.
	Policy LU-P-50	The City shall encourage and direct growth that supports the downtown as the geographic, civic, cultural, and economic center of Manteca.	**Consistent.** The project site was annexed into the city limits in 1996 and is contemplated for future urban development by the General Plan. Thus, to the extent that the General Plan's land use designations reflect the objective of directing growth in order to support the downtown area, the proposed project would be consistent in this regard. Furthermore, the proposed project is compatible with the existing central city core in that it does not propose competing uses that would draw residents or visitors away from this area.
3 – Community Design Element	Goal CD-1	Retain the compact and cohesive community form of the City.	**Consistent.** The project site is located within the existing city limits and is contemplated for future urban development by the General Plan. The proposed project would concentrate new residential development on the north side of the existing levee that bisects the project site and maintain the currently agricultural and open spaces on the south side of the levee. This is consistent with maintaining the compact and cohesive community form of Manteca.
	Policy CD-P-1	Retain the existing central city core as the geographical center of the City.	**Consistent.** The project site was annexed into the city limits in 1996 and is contemplated for future urban development by the General Plan.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
			Thus, to the extent that the General Plan's land use designations reflect the objective of directing growth in order to support the downtown area, the proposed project would be consistent. Furthermore, the proposed project is compatible with the existing central city core in that it does not propose competing uses that would draw residents or visitors away from this area.
	Policy CD-P-7	The City shall implement neighborhood design standards in the Residential districts that contribute to the overall character of the neighborhood by emphasizing traditional residential features that enhance the sense of community, ensure a safe pedestrian orientation, and minimize the visual prominence of garages.	**Consistent.** The proposed project would incorporate standards for street sections that would include architectural styles, landscaping, sidewalks, and lighting. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Goal CD-2	Maintain a memorable City identity characterized by distinctive, high quality buildings and streetscapes.	**Consistent.** Mitigation is proposed requiring preparation of design standards and guidelines that ensure that development will employ distinctive, high-quality buildings and streetscapes. Such standards include building design, landscaping, and parking lot screening requirements. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Goal CD-4	Establish distinct, attractive identities for neighborhoods, gateways and commercial areas.	**Consistent.** The proposed project would provide a high-quality, well planned residential development. The project would include common landscape themes along major arterial streets, entry gateways, and other approved design features. This is consistent with the objective of creating distinct neighborhoods.
	Goal CD-8	Upgrade and enhance the visual quality of Manteca's arterial and collector streets.	**Consistent.** The proposed project would establish special design standards for buildings that are located along E. Woodward Avenue frontage. In addition, landscaping is required

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
			along all street frontages. These characteristics would upgrade and enhance the visual quality of Manteca's streets. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-15	Major arterial streets shall include a common landscape theme that includes primary street trees, groundcover, sidewalks, bus shelters where required, and lighting applied throughout the City.	**Consistent.** The proposed project would establish standards for street sections that include landscaping, sidewalks, and lighting. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-16	The City shall develop special design standards for the perimeter road system comprising Lathrop Road, Austin Road, Woodward Avenue, and Airport Way to ensure their development as divided roadways.	**Consistent:** The proposed project would establish special design standards for areas within view of E. Woodward Avenue and S. Woodward Avenue, including building design and landscaping requirements. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-21	Provide parks and schools as distinct centers for neighborhoods.	**Consistent.** The proposed project would include onsite open space, trails, and park amenities that would be available for residents. This is consistent with the objective of providing distinct centers for neighborhoods.
	Policy CD-P-22	Provide features that distinguish one neighborhood from another, such as natural features, entry gateways, street lighting, or signage.	**Consistent.** Mitigation is proposed requiring preparation of design standards and guidelines that ensure that development will employ entry gateways, street lighting, signage and streetscapes. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-23	Provide pedestrian systems that connect the center of adjacent neighborhoods.	**Consistent.** The proposed project incorporates a trail system throughout the site of over 12 miles that will eventually connect to the City facilities. Refer to Section 3.13, Transportation for further discussion.
	Policy CD-P-24	The City shall ensure through design guidelines that the walls surrounding residential area neighborhoods are attractive and well designed.	**Consistent.** Mitigation is proposed requiring preparation of design standards and guidelines that ensure that that the walls surrounding residential area neighborhoods are

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
			attractive and well designed. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-28	The City shall establish residential design guidelines and standards.	**Consistent.** The proposed project would be subject to a design review and would be consistent with the City established design guidelines and standards. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-29	The City shall establish a street tree program for residential neighborhoods.	**Consistent.** Mitigation is proposed requiring preparation of design standards and guidelines that ensure that a street tree program is established. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-30	Neighborhoods in new growth areas shall incorporate the following characteristics: • The edges of the neighborhood shall be identifiable by use of landscaped areas along major streets or natural features, such as permanent open space. Primary arterial streets may be used to define the boundaries of neighborhoods. The street system shall be designed to discourage high volume and high speed traffic through the neighborhood. • Neighborhoods shall be not more than one mile in length or width. • Each neighborhood shall include a distinct center, such as an elementary school, neighborhood park(s), and/or a mixed-use commercial area within a reasonable walking distance of the homes, approximately one-half mile. • Each neighborhood shall include an extensive pedestrian and bikeway	**Consistent.** Mitigation is proposed requiring preparation of design standards and guidelines that ensure that development will employ distinctive, high-quality buildings and streetscapes. Such standards include building design, landscaping, and parking lot screening requirements. The proposed project incorporates a trail system throughout the site of over 12 miles that will eventually connect to the City facilities. Refer to Section 3.1, Aesthetics, Light, and Glare and Section 3.13, Transportation for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
		system comprised of sidewalks and bike lanes along streets and dedicated trails.	
	Policy CD-P-31	The pedestrian and bikeway system shall be linked to other pedestrian and bikeways in adjacent neighborhoods and, ultimately, to the Citywide Pedestrian and Bikeway Trail System to provide a continuous interconnected system.	**Consistent.** The proposed project incorporates a trail system throughout the site of over 12 miles that will eventually connect to the City facilities. Refer to Section 3.13, Transportation for further discussion.
	Goal CD-9	Establish a durable sustainable community that utilizes resources efficiently.	**Consistent.** The proposed project would include sustainable building design standard guidelines to encourage the efficient use of resources. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-32	New buildings shall be designed to be responsive to the local climate in a manner that provides shelter from sun and rain for pedestrians.	**Consistent.** The proposed project would require preparation of building design standard guidelines that emphasize the use of balconies, awnings, canopies along the faces of buildings. These features would provide shelter from sun and rain for pedestrians. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-33	Passive solar design features are encouraged whenever possible. Design of buildings should consider energy-efficient concepts such as natural heating and/or cooling, sun and wind exposure and orientation, and other solar energy opportunities.	**Consistent.** The proposed project would require preparation of building design standard guidelines that encourage the design of buildings that use natural ventilation and are oriented to minimize solar gain and maximize daylight within the building areas. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-34	Solar collectors, if used, shall be oriented away from public view or designed as an integral element of the roof structure.	**Consistent.** The proposed project would require preparation of building design standard guidelines that would ensure solar collectors when installed are not visually obtrusive. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy CD-P-35	Architectural elements that contribute to a building's character, aid in climate control, and enhance pedestrian scale are encouraged. Examples include canopies, roof overhangs, projections or recessions of stories, balconies, reveals, and awnings.	**Consistent.** Mitigation is proposed that requires the preparation of design standards that include the architectural elements identified in this policy. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-36	Encourage the creation of an urban forest comprised of street trees, residential lot trees, and trees in non-residential parking lots and other public open space.	**Consistent.** The proposed project would require preparation of building design standard guidelines that include the use of trees along the roadways and within the parking lots. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Goal CD-10	Establish a pedestrian and bicycle friendly environment in neighborhoods and commercial and office land use areas.	**Consistent.** The proposed project would provide an internal pedestrian circulation system and provide improvements to adjoining roadways, including half-width improvements. Such half-width improvements would include sidewalks or paths along all roadway frontages. The project also incorporates a trail system throughout the site of over 12 miles that will eventually connect to the City facilities.
	Goal CD-11	To the extent possible, new development shall retain or incorporate visual reminders of the agricultural heritage of the community.	**Consistent.** The proposed project would maintain agricultural uses south of the dry levee, which would serve as a reminder of agricultural heritage of the community.
	Policy CD-P-44	Provide minimal levels of street, parking, building, site and public area lighting to meet safety standards and provide direction.	**Consistent.** The residential design standards and guidelines address the provision of adequate parking and lighting. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-45	Provide directional shielding for all exterior lighting to minimize the annoyance of direct or indirect glare.	**Consistent.** The residential design standards and guidelines adhere to the City lighting requirement, including the requirement to shield exterior lighting. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy CD-P-46	Provide automatic shutoff or motion sensors for lighting features in newly developed areas.	**Consistent.** The proposed project would require preparation of building design standard guidelines that would encourage the use of photo-sensors and localized lighting controls to reduce the amount of artificial light used within indoor spaces. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-47	The City shall adopt light and glare standards that minimize the creation of new light source and the annoyance of direct and indirect glare.	**Consistent.** The proposed planned development includes design standards and guidelines that require lighting to comply with footcandle standards established in the Manteca Municipal Code. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
	Policy CD-P-48	Allow pockets of agricultural activity to remain within the urban areas of the city where such uses are compatible with the surrounding urban use.	**Consistent.** The proposed project would maintain agricultural uses south of the dry levee. The levee would serve as a buffer between the proposed residential uses and the agricultural uses, thereby contributing to land use compatibility.
	Policy CD-P-50	In order to retain a visual reminder of the agricultural heritage, the City will permit the use of non-fruiting species, such as flowering pear and plum, as secondary accent trees in landscape corridors along major streets. The primary street tree shall provide a shade canopy over the street and sidewalk.	**Consistent.** Mitigation is proposed requiring preparation of design standards and guidelines that ensure that a street tree program is established. The guidelines include a provision allowing the use of non-fruiting species, such as flowering pear and plum, as secondary accent trees in landscape corridors along major streets. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
4 – Circulation Element	Goal C-1	Provide for a circulation system that allows for the efficient movement of people, goods, and services within and through Manteca, based on land use and current improvement standards in conformance with the Public Facilities Implementation Plan.	**Consistent.** The proposed project provides an internal circulation network, including roadways and pedestrian facilities to allow efficient movement. The internal circulation network would be entirely funded by the project applicant. In addition, the proposed project includes improvements to adjoining roadways, including half-width improvements. These improvements would also be entirely funded by the project applicant.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
			Finally, the applicant would be obligated to provide fair-share fees for offsite roadway improvements, including those contemplated by the Public Facilities Implementation Plan. Refer to Section 3.13, Transportation for further discussion.
	Goal C-2	Maintain a safe vehicular circulation system.	**Consistent.** The proposed project provides an internal circulation system and would provide improvements to adjoining roadways, including half-width improvements. The applicant would also be obligated to provide fair-share fees for offsite roadway improvements. Collectively, these characteristics would be consistent with the objective of maintaining a safe vehicular circulation system. Refer to Section 3.13, Transportation for further discussion.
	Goal C-3	Expand transportation alternatives within the City, including public transit, walking, and bicycling.	**Consistent.** Mitigation is proposed requiring the provision of appropriate transit facilities within the proposed project. Refer to Section 3.13, Transportation for further discussion.
	Goal C-4	Minimize traffic accidents and hazards.	**Consistent.** The proposed project provides an internal circulation network, including roadways and pedestrian facilities to allow for efficient movement. This is consistent with the objective of providing safe circulation routes for pedestrians and motorists.
	Goal C-5	Ensure the adequate provision of both on-street and off-street parking.	**Consistent.** The project design standards and guidelines would be required to provide for the adequate provision of both on- and off-street parking.
	Goal C-6	Provide a safe secure bicycle route system.	**Consistent.** The proposed project incorporates a trail system throughout the site of over 12 miles that will eventually connect to the City facilities. Refer to Section 3.13, Transportation for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Goal C-7	Maintain coordinated, efficient bus service that provides an effective alternative to private automobile use.	**Consistent.** Mitigation is proposed requiring the provision of appropriate transit facilities within the proposed project. Refer to Section 3.13, Transportation for further discussion.
	Goal C-8	Provide for safe and convenient pedestrian circulation.	**Consistent.** The proposed project incorporates a trail system throughout the site of over 12 miles that will eventually connect to the City facilities. Refer to Section 3.13, Transportation for further discussion
	Policy C-P-1	The City shall strive to attain the highest possible traffic levels of service (LOS) consistent with the financial resources available and the limits of technical feasibility. The impact of new development and land use proposals on LOS should be considered in the review process.	**Consistent.** The Draft EIR's traffic analysis assessed traffic operations using the City's established LOS standards. The traffic analysis identifies all feasible mitigation measures and the applicant is obligated to provide its fair share of the cost of necessary improvements. Refer to Section 3.13, Transportation for further discussion.
	Policy C-P-2	Manteca's target for transportation LOS is to provide City-wide average LOS of C or better, and a minimum of LOS D at any individual location. LOS C, LOS D, and the other Level of Service ratings as defined in current traffic engineering standards. This "C average, D minimum" shall be accomplished by attempting to provide LOS C at all locations, but accepting LOS D under the following circumstances: a. Where constructing facilities with enough capacity to provide LOS C is found to be unreasonably expensive. b. Where it is difficult or impossible to maintain LOS C because surrounding facilities in other jurisdictions operate at LOS D or worse.	**Consistent.** The Draft EIR's traffic analysis assessed traffic operations using the City's established LOS standards. The traffic analysis identifies all feasible mitigation measures and the applicant is obligated to provide its fair share of the cost of necessary improvements. Refer to Section 3.13, Transportation for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
		c. Where free-flowing roadways or interchange ramps would discourage use of alternate travel modes. d. Where maintaining LOS C will be a disincentive to use of existing alternative modes or to the implementation of new transportation modes that would reduce vehicle travel.	
	Policy C-P-3	Streets shall be dedicated, widened, extended, and constructed according to the Street cross-section diagrams established in the City Improvement Standards. Dedication and improvement of full rights-of-way as shown in the Street Standards shall not be required in existing developed areas where the City determines that such improvements are either infeasible or undesirable.	**Consistent.** The proposed project would provide improvements to adjoining roadways, including half-width improvements to E. Woodward Avenue and S. Woodward Avenue that must be in place prior to occupancy.
	Policy C-P-4	Major circulation improvements shall be completed as abutting lands develop or re-develop, with dedication of right-of-way and construction of improvements, or participation in construction of such improvements, required as a condition of approval.	**Consistent.** The proposed project would provide improvements to adjoining roadways, including half-width improvements to E. Woodward Avenue and S. Woodward Avenue that must be in place prior to occupancy. In addition, the applicant would pay all applicable, traffic-related development fees to help fund major circulation improvements.
	Policy C-P-5	Development which would necessitate roadway improvements prior to the development of lands abutting those roadway improvements shall be required to make such improvements, or participate in such improvements, as a condition of approval.	**Consistent.** The proposed project would provide improvements to adjoining roadways, including half-width improvements to E. Woodward Avenue and S. Woodward Avenue that must be in place prior to occupancy.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy C-P-6	New development will pay a fair share of the costs of street and other traffic and transportation improvements based on traffic generation and impacts on levels of service in conformance with the standards and policies established in the Public Facilities Implementation Plan.	**Consistent.** The applicant would pay all transportation fees in accordance with the latest adopted fee schedule, including those associated with the Public Facilities Implementation Program. In addition, the applicant would contribute fair-share fees for all offsite roadway improvements necessary to mitigate project-related impacts.
	Policy C-P-7	The street system shall be expanded in a contiguous and concentric manner to serve new development areas and to provide improved circulation for existing residents.	**Consistent.** The proposed project includes several internal traffic circles and interconnected street system that would provide improved circulation for existing residents.
	Policy C-P-8	Street improvements will be designed to provide multiple, direct and convenient traffic routes.	**Consistent.** The half-width improvements along E. Woodward Avenue and S. Woodward Avenue would provide additional travel and turn lanes, and pedestrian and bicycle facilities. As such, these improvements are consistent with the objective of providing multiple, direct, and convenient traffic routes.
	Policy C-P-9	Residential and collector street intersections with collector and arterial streets shall be aligned with other residential and collector streets, where feasible, to allow light electric vehicles (NEVs), bicyclists, and pedestrians to travel conveniently and safely from one neighborhood to another without using major streets.	**Consistent.** The proposed project's street system would have a provision to be able to connect to the future land uses to the east. This would be consistent with the objective of providing connection to adjacent neighborhoods.
	Policy C-P-10	Signals, roundabouts, traffic circles and other traffic management techniques shall be applied at residential and collector street intersections with collector and arterial streets in order to allow light electric vehicles (NEVs), bicyclists, and pedestrians to travel conveniently and safely	**Consistent.** The proposed project includes several internal traffic circles and interconnected street system that would provide improved circulation for existing residents.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
		from one neighborhood to another.	
	Policy C-P-12	The City shall promote development of a perimeter road system along Lathrop Road, Austin Road, Woodward Avenue, and Airport Way.	**Consistent:** The half-width improvements along E. Woodward Avenue and S. Woodward Avenue would facilitate the improvement of these roadways to their ultimate buildout widths and, therefore, would be consistent with objectively of developing a perimeter road.
	Policy C-P-13	The City may allow development of private streets in new residential projects that demonstrate the ability to facilitate police patrol, emergency access, and solid waste collection and fund on-going maintenance to the satisfaction of the Community Development Director.	**Consistent:** The proposed project's streets would be private. The applicant will be obligated to demonstrate that these streets are designed to facilitate police patrol, emergency access, and solid waste collection. In addition, the applicant will be required to demonstrate that a funding source would be available to maintain the streets.
	Policy C-P-15	Residential subdivisions with lots fronting on an existing freeway or arterial street shall provide for a separate frontage road. Developers shall build frontage roads per City improvement standards.	**Consistent:** The General Plan designates E. Woodward Avenue as an arterial roadway. As shown in Exhibit 2-4, none of the proposed lots fronting Woodward Avenue would take direct access from this facility.
	Policy C-P-16	All single-family residential developments along the south side of the SR 120 shall be developed with a frontage road between the residential development and the freeway and provided with acceptable noise attenuation measures.	**Consistent.** The proposed project incorporates noise attenuation features such as building setbacks, walls, and landscaping along roadways, as well as orienting outdoor living areas away from roadways. The characteristics are consistent with the objective of incorporating noise considerations into land use planning decisions in order to minimize the effects of noise on adjacent land uses. Refer to Section 3.10, Noise for further discussion.
	Policy C-P-17	Residential subdivisions backing onto a freeway are discouraged. Where subdivisions back on to an arterial street or collector street, the developer shall have the option to build a masonry wall or a combination wall and berm.	**Consistent.** The proposed project incorporates noise attenuation features such as building setbacks, walls, and landscaping along roadways, as well as orienting outdoor living areas away from roadways. The characteristics are consistent with the objective of incorporating noise considerations into land use planning decisions in order to

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
		The top of walls along freeways shall be at least eight-feet above the elevation of the freeway travel lanes. Walls and berms shall be attractive and developed for low maintenance. All such berms and walls shall be approved by the City.	minimize the effects of noise on adjacent land uses. Refer to Section 3.10, Noise for further discussion. Refer to Section 3.1, Aesthetics for further discussion on design of walls.
	Policy C-P-18	In accord with the PFIP the City shall assess development fees for traffic signals and highway interchanges sufficient to fund system wide improvements. The development fee schedule for these traffic improvements shall be periodically reviewed, and revised as necessary.	**Consistent:** The applicant would pay all transportation fees in accordance with the latest adopted fee schedule, including those associated with the Public Facilities Implementation Program. Such fees may be used for system wide roadway improvements.
	Policy C-P-21	The creation or continuance of traffic hazards shall be discouraged in new development and other proposals requiring the City to exercise its discretionary authority.	**Consistent.** The proposed project provides an internal circulation system and would provide improvements to adjoining roadways, including half-width improvements. The applicant would also be obligated to provide fair-share fees for offsite roadway improvements. Collectively, these characteristics would be consistent with the objective of maintaining a safe vehicular circulation system. Refer to Section 3.13, Transportation for further discussion.
	Policy C-P-22	In the development of new projects, the City shall give special attention to maintaining adequate corner-sight distances at city street intersections and at intersections of city streets and private access drives and roadways.	**Consistent.** The proposed project's street layout reflects standard industry practice and is similar to other residential developments in Manteca. No driveway access would be permitted along E. Woodward Avenue, S. Woodward Avenue, or Trails Loop Road—the three primary roadways serving the project—which would serve to limit potential problems with corner-sight distances on these facilities. Note that corner sight distances will be evaluated as part of the plan check process.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy C-P-26	The city shall require all new development to provide an adequate number of off-street parking spaces to accommodate the typical parking demands of the type of development on the site. In the downtown area, the City is responsible for development of parking facilities and new development is not required to provide parking.	**Consistent.** The project design standards and guidelines provide for the adequate provision of off-street parking.
	Policy C-P-33	The City shall establish a safe and convenient network of identified bicycle routes connecting residential areas with recreation, shopping, and employment areas within the city.	**Consistent.** The proposed project's roadways and pathways would be accessible to bicycles and would connect to external facilities. This is consistent with the objective of establishing a safe and convenient network of identified bicycle routes connecting residential areas with recreation, shopping, and employment areas within the City.
	Policy C-P-34	Provide spur or branch walkways connecting to the residential neighborhoods and primary public destinations.	**Consistent.** The proposed project would provide an internal pedestrian circulation network that would connect to external pedestrian facilities. The internal network would include spur or branch walkways within various residential neighborhoods.
	Policy C-P-35	Route sidewalks so that they connect to major public parking areas, transit stops, and intersections with the bikeway system.	**Consistent.** The proposed project would provide an internal pedestrian circulation network that would connect to external pedestrian facilities. The internal network would include sidewalks and paths that provide access to transit facilities and interconnect with the bikeway system.
	Policy C-P-37	Improve safety conditions, efficiency, and comfort for bicyclists and pedestrians. Provide shade and/or protection from wind and other weather conditions when possible.	**Consistent.** The proposed project provides an internal circulation network, including roadways and pathways that would allow for safe bicycle and pedestrian travel. Landscaping, including trees and shrubs would be located along the facilities, which would provide shade and protection from the wind.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy C-P-38	Wherever possible, bicycle facilities should be separate from roadways and walkways.	**Consistent.** The proposed project will include over 12 miles of bicycle/pedestrian trails that would be separate from roadways.
	Policy C-P-39	The City shall limit on-street bicycle routes to those streets where the available roadway width and traffic volumes permit safe coexistence of bicycle and motor vehicle traffic.	**Consistent.** The proposed project's internal roadways would be private and, therefore, would not be eligible for designation as official bicycle routes by the City of Manteca. Nonetheless, primary roadways within the project site (e.g., Trails Loop Road) would provide sufficient width to allow safe on-street bicycle travel. Furthermore, the half-width improvements to E. Woodward Avenue and S. Woodward Avenue would provide additional pavement width that would allow safe on-street bicycle travel. As such, these roadways would be eligible for designation as official bicycle routes.
	Policy C-P-42	The City shall work with San Joaquin Regional Transit District to determine the needs for additional bus service within the Manteca City limits.	**Consistent.** Mitigation is included that requires that the applicant shall incorporate bus turnouts and shelters into the project site plan (including frontage and internal street) as required by the City's Public Works Department and Manteca Transit.
5 – Economic Development Element	Policy ED-P-9	Promote the development of affordable and market rate housing that matches with the needs of the present and future Manteca work force.	**Consistent.** The project will either provide deed-restricted affordable housing units onsite or provide in-lieu of fee payments to the City for construction of such units offsite.
	Goal ED-10	Provide a variety of housing types to house all segments of the Manteca community in accordance with the Housing Element.	**Consistent.** The proposed project provides a mix of residential densities, including single-family detached units, townhome/garden apartments, and apartments. Units will be available for sale or rental. This is consistent with the objective of providing a variety of housing types for all segments of the community.
	Policy ED-P-17	Plan for a broad range of housing types and densities to accommodate all income levels and job classifications.	**Consistent.** The proposed project provides mix of residential densities, including single-family detached units, townhome/garden apartments, and apartments. Units will be available for sale or rental. This is consistent with the objective providing a variety of housing types.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy ED-P-18	Plan for a balanced community where the Manteca workforce will be able to afford housing within the city of Manteca.	**Consistent.** The proposed project provides mix of residential densities, including single-family detached units, townhome/garden apartments, and apartments. Units will be available for sale or rental. This is consistent with the objective of providing a range of housing types that is affordable to the Manteca workforce.
	Goal ED-11	Maintain and enhance the real and perceived safety in the community.	**Consistent.** The project design standards and guidelines would incorporate features to ensure that the development is consistent with the objective of providing a safe community.
	Goal ED-12	Enhance recreational and educational opportunities in the community.	**Consistent.** The project will include over 12 miles of bicycle/pedestrian trails for use by its residents that would provide recreational opportunities.
	Goal ED-13	Preserve and strengthen the city neighborhoods.	**Consistent.** The proposed project would provide a high-quality, well planned residential development. The project would include onsite open space, trails, and park amenities that would be available for residents. This is consistent with the objective of providing strong neighborhoods.
	Goal ED-15	Promote and protect qualities and resources that make the Manteca area special, identifiable, unique, and attractive.	**Consistent.** This EIR identifies necessary mitigation measures for impacts to agricultural resources, biological resources, cultural resources, and hydrological resources. The implementation of these mitigation measures would be consistent with the objective of protecting natural resources that are of value to the Manteca area.
	Goal ED-16	Maintain and enhance the physical beauty of the Community and surrounding landscape.	**Consistent.** The proposed project would include design standards and guidelines subject to City's review that would ensure that the high-quality appearance maintains and enhances the physical beauty of the community and surrounding landscape.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy ED-P-19	Promote Manteca as a desirable location to live and visit, promoting the "Family City" image.	**Consistent.** The proposed project would provide a high-quality, well planned residential development. The project would include onsite open space, trails, and park amenities that would be available for residents. This is consistent with the objective of promoting the "Family City" image.
	Policy ED-P-21	Enhance community identity and beauty.	**Consistent.** The proposed project would include design standards and guidelines subject to City's review that would ensure that the high-quality appearance maintains and enhances the physical beauty of the community and surrounding landscape.
	Policy ED-P-23	Infrastructure needed to serve new development shall be the responsibility of new development and not existing residents.	**Consistent.** The proposed project identifies necessary infrastructure improvements for circulation, utilities, and drainage facilities. The project applicant is required to pay the full cost of all infrastructure necessary to serve the residential uses. In addition, the applicant is required to pay development fees in accordance with the City's latest adopted fee schedule.
	Goal ED-17	Assure adequate public infrastructure is available at the right place and the right time to serve economic development opportunities.	**Consistent.** The provision of urban infrastructure (e.g., roadways, potable water, wastewater, storm drainage, energy, and telecommunications) is a condition of approval for the proposed project.
	Goal ED-19	Assure that new development provides funding for necessary infrastructure.	**Consistent.** The project applicant is required to pay the full cost of all infrastructure necessary to serve the proposed project. In addition, the applicant is required to pay development fees in accordance with the City's latest adopted fee schedule.
	Policy ED-P-24	Public infrastructure adequate to serve planned economic growth should be available and properly phased.	**Consistent:** The proposed project contains provisions that address land use, design, infrastructure, and phasing to ensure that development occurs in a logical, orderly, and planned manner. This would ensure that the proposed Planned Development is served by adequate services and infrastructure and does not unduly burden the City of Manteca.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy ED-P-25	Private infrastructure particularly low cost power, and high capacity telecommunications should be available at the right place and the right time.	**Consistent.** The proposed project would be served by Pacific Gas and Electric Company for electricity and natural gas. The project would also be served by telecommunications provided by Verizon and Comcast.
6 – Public Facilities and Services Element	Goal PF-3	Facilities improvements and services required to serve development will not place an economic burden on existing residents of the City. Development will pay a fair share of all costs of required public infrastructure and services.	**Consistent.** The proposed project would provide the full cost of necessary onsite infrastructure and utility improvements and would provide development fees to public service providers. These requirements would ensure that improvements and services required to serve the proposed project will not place an economic burden on existing residents of the City.
	Goal PF-4	Public improvements and facilities will be designed to enhance, rather than degrade, the natural environment in the City and surrounding area.	**Consistent.** The drainage improvements contemplated by the proposed project seek to create multi-use facilities that are also available for open space and recreation. This is consistent with the objective of designing improvements to enhance the natural environment and surrounding area.
	Goal PF-5	The City's public services and facilities will support economic development and residential growth in the City.	**Consistent:** The proposed project contains provisions that address infrastructure, and phasing to ensure that the City has adequate resources to support growth.
	Policy PF-P-2	Encourage comprehensive development rather than incremental, single project development.	**Consistent.** Although the proposed project is not a specific plan, the proposed Planned Development overlay is consistent with the objective of using a comprehensive land use plan to guide urban development in an orderly, well-planned manner.
	Goal PF-7	Maintain an adequate level of service in the City's water system to meet the needs of existing and projected development.	**Consistent.** The City of Manteca prepared a Water Supply Assessment (WSA) for the proposed project. The WSA concluded that with the provision of an additional well, adequate water supplies would be available to serve the proposed project. The project applicant will be required to install the well and all necessary infrastructure improvements necessary to serve the

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
			proposed project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-6	The City shall develop new water sources as necessary to serve new development	**Consistent.** The WSA concluded that with the provision of an additional well, adequate water supplies would be available to serve the proposed project. The project applicant will be required to install the well and all necessary infrastructure improvements necessary to serve the proposed project. As such, new water sources would be developed in conjunction with the proposed project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-7	The City shall develop new water storage facilities and major distribution lines as necessary to serve new development.	**Consistent.** The project applicant will be required to install a new well and all necessary infrastructure improvements necessary to serve the proposed project. As such, new water infrastructure would be developed in conjunction with the proposed project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-11	The City will develop and implement water conservation measures as necessary elements of the water system.	**Consistent.** This Draft EIR identifies water conservation measures and practices intended to reduce consumption of water. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-12	The City shall continue to assess a water development fee on all new commercial, industrial, and residential development sufficient to fund system-wide capacity improvements. The water development fee schedule shall be periodically reviewed and revised as necessary.	**Consistent.** The project applicant will be required to pay the water development fee.
	Policy PF-P-13	Ensure that all new development provides for and funds a fair share of the costs for adequate water distribution, including line extensions, easements, and plant expansions.	**Consistent:** The project applicant will provide the full cost of all water infrastructure improvements necessary to serve the proposed project.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy PF-P-17	The City of Manteca shall consider incremental increases in the demands on groundwater supply and water quality when reviewing development applications.	**Consistent.** The City of Manteca prepared a WSA for the proposed project, which evaluated the incremental increase in demands for groundwater supply. The WSA concluded that with the provision of an additional well, adequate water supplies would be available to serve the proposed project. The project applicant will be required to install the well and all necessary infrastructure improvements necessary to serve the proposed project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal PF-8	Maintain an adequate level of service in the City's sewage collection and disposal system to meet the needs of existing and projected development.	**Consistent.** The project applicant will install and pay the full cost of all necessary onsite and offsite wastewater collection improvements necessary to serve the proposed project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-18	Ensure wastewater collection and treatment for all development in the City and the safe disposal of wastes.	**Consistent.** The project applicant will provide the full cost of all wastewater infrastructure improvements necessary to serve the proposed project.
	Policy PF-P-20	The City shall develop new sewage treatment and trunk line capacity as necessary to serve new development.	**Consistent.** The project applicant will install and pay the full cost of all necessary onsite and offsite wastewater collection improvements necessary to serve the proposed project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-24	Ensure that all new development provides for and funds a fair share of the costs for adequate sewer distribution, including line extensions, easements, and plant expansions.	**Consistent.** The project applicant will provide the full cost of all wastewater infrastructure improvements necessary to serve the proposed project.
	Goal PF-9	Maintain an adequate level of service in the City's drainage system to accommodate runoff from existing and projected development and to prevent property damage due to flooding.	**Consistent.** The project applicant is required to prepare a drainage plan for the proposed project that identifies onsite drainage improvements necessary to provide adequate storm drainage. The project applicant will provide the full cost of all drainage infrastructure improvements necessary

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
			to serve the proposed project. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy PF-P-27	The City shall require the dedication and improvement of drainage detention basins as a condition of development approval according to the standards of the Drainage Master Plan. The responsibility for the dedication and improvement of detention basins shall be based on the prorated share of stormwater runoff resulting from each development.	**Consistent.** The project applicant is required to prepare a drainage plan for the proposed project that identifies onsite drainage improvements necessary to provide adequate storm drainage. Drainage detention basins will be dedicated as appropriate. The applicant will be responsible for its proportionate share of offsite drainage improvements, including detention basins.
	Policy PF-P-28	Storm drainage systems within new development areas shall include open drainage corridors where feasible to supplement or replace an underground piped drainage system. The drainage systems would provide for short-term storm water detention, storm water conveyance for storm waters exceeding a 10-year event, storm water quality treatment, bike and pedestrian paths, and visual open space within neighborhoods. The width and length of the corridors would be determined by the stormwater management requirements. The drainage systems would provide a pedestrian connection between parks and access to open space from residential neighborhoods. The neighborhoods would be designed with homes oriented to, rather than backing on the open space corridor.	**Consistent.** The proposed project identifies necessary drainage improvements to ensure that adequate storm drainage is provided. These improvements include the use of open channels that also serve as open space and recreational facilities.
	Goal PF-10	The City shall ensure adequate, reliable electric service is available to all users in the City.	**Consistent.** The proposed project would be served by Pacific Gas and Electric Company (PG&E) for electricity. Refer to Section 3.12, Public Services and Utilities for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy PF-P-29	Ensure that reliable, adequate electric service is available to all users in the City.	**Consistent.** The proposed project would be served by PG&E for electricity. PG&E provided written confirmation indicating that it could serve the proposed project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal PF-11	Provide for the implementation and enforcement of the provisions for the Source Reduction and Recycling Element, as mandated by the State.	**Consistent.** Mitigation measures are proposed requiring construction and demolition debris recycling and the installation of recycling collection facilities in the multi-family residential uses. These mitigation measures are intended to achieve the waste diversion objectives outlined in the Source Reduction and Recycling Element. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal PF-12	Maintain efficient, effective and economical solid waste services for the residents, businesses and visitors to Manteca.	**Consistent.** The proposed project would provide onsite solid waste and recycling collection facilities that would allow for efficient, effective, and economical solid waste services to be provided to project residents. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-31	The City will implement and enforce the provisions of its Source Reduction and Recycling Element.	**Consistent.** Mitigation measures are proposed requiring construction and demolition debris recycling and the installation of recycling collection facilities in the multi-family residential uses. These mitigation measures are intended to achieve the waste diversion objectives outlined in the Source Reduction and Recycling Element. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal PF-13	Maintain sufficient land inventory so that the Manteca Unified School District can provide for the educational needs of Manteca residents.	**Consistent:** The Manteca Unified School District has secured land in the project vicinity to develop new school facilities. These new schools would serve students generated by the proposed project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-33	The City shall cooperate with the Manteca Unified School District and others in locating	**Consistent:** The Manteca Unified School District was consulted about the proposed project's demand for school

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
		and reserving appropriate sites for new neighborhood walking distance schools. Adequate facilities shall be planned to accommodate new residential development and endeavor to create neighborhood schools.	facilities. The School District has indicated that it has secured land in the project vicinity to develop new school facilities. These new schools would be within walking distance of the project site. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-34	The City shall cooperate with the Manteca Unified School District in their collection of school facility development fees from new development.	**Consistent:** The proposed project would pay all applicable school development fees to Manteca Unified School District at the time building permits are sought. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-35	Financing of new school facilities will be planned concurrent with new development.	**Consistent:** The proposed project would pay all applicable school development fees to Manteca Unified School District at the time building permits are sought. These fees will be available to fund the construction of the planned schools in the project vicinity. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-39	The City shall endeavor through adequate staffing and patrol arrangements to maintain the minimum feasible police response times for police calls.	**Consistent:** The Manteca Police Department was consulted about the proposed project's demands on police protection. The Police Department indicated that it could accommodate the project's anticipated calls for service from its existing resources. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-40	The City shall provide police services to serve the existing and projected population.	**Consistent:** The Manteca Police Department would provide police protection to the proposed project. The Police Department indicated that it could accommodate the project's anticipated calls for service from its existing resources. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-43	The City shall endeavor through adequate staffing and station locations to maintain the minimum feasible response time for fire and emergency calls.	**Consistent:** The Manteca Fire Department was consulted about the proposed project's demands on fire protection and emergency medical services. The Fire Department indicated that with the completion of

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
			the planned station in southwestern Manteca, the proposed project would be served with adequate response times. As such, the project applicant will be required to contribute development fees to the City to fund the development of the planned fire station. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PF-P-44	The City shall provide fire services to serve the existing and projected population.	**Consistent.** The Manteca Fire Department would provide fire protection and emergency medical services to the proposed project. The project applicant will be required to contribute development fees to the City to fund the development of the planned fire station in southwestern Manteca. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal PF-14	Establish and maintain a park system and recreation facilities that support economic development and residential growth in the City.	**Consistent.** The project would provide more than 70 acres of parks and over 12 miles of bicycle/pedestrian trails for use by its residents. In addition, the proposed project would provide park development fees to the City of Manteca at the time building permits are sought, which could be used to expansion and maintenance of offsite park facilities.
	Goal PF-15	Establish and maintain a park system and recreation facilities that are suited to the needs of Manteca residents and visitors.	**Consistent.** The project would provide more than 70 acres of parks and over 12 miles of bicycle/pedestrian trails for use by its residents. In addition, the proposed project would provide park development fees to the City of Manteca at the time building permits are sought, which could be used to expansion and maintenance of offsite park facilities.
	Goal PF-16	Promote the provision of private recreational facilities and opportunities.	**Consistent.** The project would provide more than 70 acres of parks and over 12 miles of bicycle/pedestrian trails for use by its residents.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Goal PF-18	Provide a network of pedestrian and bicycle routes connecting Manteca's major open space areas and destination points.	**Consistent.** The project would provide over 12 miles of bicycle/pedestrian trails for use by its residents. In addition, the proposed project would provide half-width improvements to E. Woodward Avenue and S. Woodward Avenue, which would include sidewalks and additional roadway width that would be suitable for bicycling. These facilities would ultimately link-up to other pedestrian and bicycle networks.
	Policy PF-P-46	The City shall expand the community and neighborhood park system with the goal of providing neighborhood park facilities within reasonable walking distance of all city residential areas.	**Consistent.** The project would provide more than 70 acres of parks and over 12 miles of bicycle/pedestrian trails for use by its residents. In addition, the proposed project would provide park development fees to the City of Manteca at the time building permits are sought, which could be used for development of new community and neighborhood parks.
	Policy PF-P-47	The City shall use joint development of park and drainage detention basins in the development of neighborhood parks.	**Consistent.** The proposed project's 70 acres of onsite park facilities also are expected to serve as drainage facilities.
	Policy PF-P-49	City park acquisition and development efforts shall be based on a goal of 5 acres of developed neighborhood and community parkland per 1,000 residents within the city limits. The distribution of land between neighborhood and community parks shall be determined within the Parks and Recreation Master Plan.	**Consistent.** The project would provide more than 70 acres of parks and over 12 miles of bicycle/pedestrian trails for use by its residents. In addition, the proposed project would provide park development fees to the City of Manteca at the time building permits are sought, which could be used for development of new community and neighborhood parks in accordance with the established ratio.
	Policy PF-P-50	Neighborhood parks shall conform to the following general guidelines (specific details and standards to be determined within the Parks and Recreation Master Plan): • The typical minimum size shall be set to support active and passive recreation activities.	**Consistent.** The project would provide more than 70 acres of parks and over 12 miles of bicycle/pedestrian trails for use by its residents. In addition, the proposed project would provide park development fees to the City of Manteca at the time building permits are sought, which could be used for development of new neighborhood parks that meet the criteria established in this policy.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
		• The typical service area for a neighborhood park is approximately ¼ mile walking distance. • Neighborhood parks shall include a turf area above the basin flood line of sufficient area to be used for playgrounds, sports, picnic areas, and other recreational facilities.	
	Policy PF-P-53	All new residential development will be required to pay a park acquisition and improvement fee, based on providing 5 acres per 1,000 residents, to fund system-wide improvements.	**Consistent.** The proposed project would provide park development fees to the City of Manteca at the time building permits are sought, which could be used for development of new parks in accordance with the established ratio.
	Policy PF-P-54	The City shall require the provision of private open space and recreational facilities as part of new residential developments.	**Consistent.** The project would provide more than 70 acres of parks and over 12 miles of bicycle/pedestrian trails for use by its residents.
	Policy PF-P-56	The City shall develop a convenient system of pedestrian sidewalks and pathways linking City parks, major open space areas, and the downtown core.	**Consistent.** The project would provide over 12 miles of bicycle/pedestrian trails for use by its residents. In addition, the proposed project would provide half-width improvements to E. Woodward Avenue and S. Woodward Avenue, which would include sidewalks and additional roadway width that would be suitable for bicycling. These facilities would ultimately connect to other pedestrian networks that link with City parks, open space areas, and the downtown core.
	Policy PF-P-57	The City shall adopt a Bicycle Route Master Plan and develop a bicycle route system linking areas, schools, public facilities, the downtown core, and neighborhoods.	**Consistent.** The project would provide over 12 miles of bicycle/pedestrian trails for use by its residents. In addition, the proposed project would provide half-width improvements to E. Woodward Avenue and S. Woodward Avenue, which would include additional roadway width that would be suitable for bicycling. This is consistent with the objective of linking neighborhoods with schools, public facilities, and the downtown core.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
7 – Safety Element	Goal S-1	Prevent loss of lives, injury, and property damage due to geological hazards and seismic activity.	**Consistent.** This Draft EIR evaluates the potential for loss of lives, injury, and property damage as a result of geologic hazards and seismic activity and identifies necessary mitigation measures. Refer to Section 3.6, Geology, Soils, and Seismicity for further discussion.
	Goal S-2	Prevent loss of lives, injury, and property damage due to the collapse of buildings and critical facilities, and to prevent disruption of essential services in the event of an earthquake.	**Consistent.** This Draft EIR evaluates the potential for loss of lives, injury, and property damage as a result of earthquakes and identifies necessary mitigation measures. Refer to Section 3.6, Geology, Soils, and Seismicity for further discussion.
	Policy S-P-1	The City shall require preparation of geological reports and/or geological engineering reports for proposed new development located in areas of potentially significant geological hazards, including potential subsidence (collapsible surface soils) due to groundwater extraction.	**Consistent.** A Preliminary Geotechnical Investigation was prepared by Terrasearch, Inc., which is included in Appendix G. In addition, the project applicant will be required to submit a design-level geological engineering reports at the time building permits are sought. Refer to Section 3.6, Geology, Soils, and Seismicity for further discussion.
	Policy S-P-2	The City shall require new development to mitigate the potential impacts of geologic hazards through Building Plan review.	**Consistent.** The project applicant will be required to demonstrate that all geological hazards can be mitigated through Building Plan review prior to issuance of building permits. Refer to Section 3.6, Geology, Soils, and Seismicity for further discussion.
	Policy S-P-3	The City shall require new development to mitigate the potential impacts of seismic induced settlement of uncompacted fill and liquefaction (water-saturated soil) due to the presence of a high water table.	**Consistent.** The project applicant will be required to demonstrate that impacts of seismic-induced settlement of uncompacted fill and liquefaction can be mitigated through Building Plan review prior to issuance of building permits. Refer to Section 3.6, Geology, Soils, and Seismicity for further discussion.
	Goal S-3	Prevent loss of lives, injury, and property damage due to flooding.	**Consistent.** The portion of project site south of the levee lies within 100-year flood hazard area. No development is proposed on that portion of the project site. This is consistent with the objective of preventing loss of lives, injury, and property damage due to flooding.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Goal S-4	Pursue flood control solutions that minimize environmental impacts.	**Consistent.** The proposed project identifies necessary drainage improvements to ensure that adequate storm drainage is provided. These improvements include the use of open channels that also serve as open space and recreational facilities. This is consistent with the objective of pursuing flood control solutions that minimize environmental impacts. Refer to Section 3.8, Hydrology and Water Quality for further discussion
	Policy S-P-7	Regulate all uses and development in areas subject to potential flooding through zoning and other land use regulations.	**Consistent.** No development is proposed on the portion of the project site that lies within the 100-year flood zone. This portion of the project site will be maintained as open space.
	Policy S-P-9	Combine flood control, recreation, water quality, and open space functions where feasible.	**Consistent.** The proposed project identifies necessary drainage improvements to ensure that adequate storm drainage is provided. These improvements include the use of open channels that also serve as open space and recreational facilities. This is consistent with the objective of combining flood control, recreation, water quality, and open space functions.
	Policy S-P-10	Ensure that any existing structures subject to the 100-year flood provide adequate protection from flood hazards.	**Consistent.** No development is proposed on the portion of the project site that lies within the 100-year flood zone.
	Policy S-P-11	Ensure that the impacts of potential flooding are adequately analyzed when considering areas for future urban expansion.	**Consistent.** This Draft EIR evaluates impacts associated with flooding. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy S-P-12	New residential development, including mobile homes, shall be constructed so that the lowest floor is at least one foot above the 100-year flood level.	**Consistent.** All residential uses would be located above the 100-year flood elevation. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Goal S-5	The City shall protect the health, safety, natural resources, and property	**Consistent.** The proposed project consists of residential development and would not be a large-quantity user of

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
		through regulation of use, storage, transport, and disposal of hazardous materials.	hazardous materials. Regardless, this Draft EIR evaluates potential impacts associated with hazardous materials and identifies mitigation measure to reduce risks to acceptable levels. Refer to Section 3.7, Hazards and Hazardous Materials for further discussion.
	Policy S-P-16	City approvals of all new development shall consider the potential for the production, use, storage, and transport of hazardous materials and provide for reasonable controls on such hazardous materials.	**Consistent.** The proposed project consists of residential development and would not be a large-quantity user of hazardous materials. Regardless, this Draft EIR evaluates potential impacts associated with hazardous materials and identifies mitigation measure to reduce risks to acceptable levels. Refer to Section 3.7, Hazards and Hazardous Materials for further discussion.
8 – Resource Conservation Element	Goal RC-1	Minimize the consumption of water to reasonable levels consistent with a high level of amenities and quality of life for City residents and visitors.	**Consistent.** This Draft EIR identifies water conservation measures and practices intended to reduce consumption of water to reasonable levels. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal RC-2	Maximize the beneficial uses of water by recycling water for irrigation and other non-potable uses.	**Consistent.** This Draft EIR identifies the installation of "purple pipe" for future recycled water use as a mitigation measure. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy RC-P-1	The City shall continue to implement water conservation standards for all commercial and industrial development, and for all existing and new residential development.	**Consistent.** This Draft EIR identifies water conservation measures and practices. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy RC-P-2	The City shall explore potential uses of treated wastewater when such opportunities become available.	**Consistent.** This Draft EIR identifies the installation of "purple pipe" for future recycled water use as a mitigation measure. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy RC-P-3	The City shall protect the quantity of Manteca's groundwater.	**Consistent.** The proposed project would implement stormwater pollution prevention management practices during construction and operations to prevent pollutants from entering the

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
			groundwater table. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy RC-P-4	The City shall require water conservation in both City operations and private development to minimize the need for the development of new water resources.	**Consistent.** This Draft EIR identifies water conservation measures and practices. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal RC-3	The City shall ensure that land use and circulation improvements are coordinated to reduce the number and length of vehicle trips and thereby help conserve scarce or nonrenewable energy resources.	**Consistent.** The proposed project would be accessible to public transit and would provide bicycle and pedestrian facilities. This is consistent with the objective of reducing trip length and ultimately conserving energy resources.
	Goal RC-5	Promote energy efficiency in new development and in building design.	**Consistent.** The proposed project design standards and guidelines include provisions for sustainable design features.
	Policy RC-P-6	Comply with construction and design standards that promote energy conservation.	**Consistent.** The proposed project design standards and guidelines include provisions for sustainable design features.
	Policy RC-P-7	Conserve public utilities.	**Consistent.** The Draft EIR identifies a number of water and energy conservation measures that would promote the avoidable of inefficient, unnecessary, and wasteful consumption of public utilities.
	Policy RC-P-8	Conserve petroleum products.	**Consistent.** The proposed project would be accessible to public transit and would provide bicycle and pedestrian facilities. This is consistent with the objective of conserving petroleum products.
	Policy RC-P-9	The City shall support use of alternative energy sources in new commercial, industrial and residential development.	**Consistent.** Homeowners within the proposed project would have the option of installing solar energy systems.
	Goal RC-6	Preserve and maintain Manteca's soils to avoid pollution of surface waters, decreased air quality, and loss of soil.	**Consistent.** This EIR sets forth stormwater pollution prevention management practices during construction and operations to prevent soil erosion and loss of topsoil. Refer

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
			to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy RC-P-10	Minimize soil erosion and loss of topsoil from land development activities, wind, and water flow.	**Consistent.** This EIR sets forth stormwater pollution prevention management practices during construction and operations to prevent soil erosion and loss of topsoil. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Goal RC-7	To protect water quality in the San Joaquin River and in the area's groundwater basin.	**Consistent.** This EIR sets forth stormwater pollution prevention management practices during construction and operations to prevent pollution from entering the San Joaquin River and the groundwater table. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy RC-P-11	Minimize sedimentation and loss of topsoil from soil erosion.	**Consistent.** This EIR sets forth stormwater pollution prevention management practices during construction and operations to minimize sedimentation and loss of topsoil from soil erosion. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy RC-P-12	Minimize pollution of waterways and other surface water bodies from urban runoff.	**Consistent.** This EIR sets forth stormwater pollution prevention management practices during construction and operations to prevent pollution from entering downstream waterways. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy RC-P-13	Protect the quality of Manteca's groundwater.	**Consistent.** This EIR sets forth stormwater pollution prevention management practices during construction and operations to prevent pollution from entering the groundwater table. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Goal RC-8	To provide adequate land for open space as a framework for urban development, to meet the passive recreation needs of the community, and to set aside wildlife habitat.	**Consistent.** The proposed project includes open space/drainage areas that serve a dual purpose of providing for stormwater drainage and recreational needs. The open space areas also provide habitat for wildlife.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy RC-P-16	Provide public and private open space within urbanized parts of Manteca, in order to provide visual contrast with the built environment and to provide for the recreational needs of residents.	**Consistent.** The proposed project includes open space/drainage areas that serve a dual purpose of providing for stormwater drainage and recreational needs. The open space provides a visual contrast to the urban development within the project area.
	Policy RC-P-18	New development shall maximize the potential for open space and visual experiences.	**Consistent.** The proposed project includes trails and parks that serve recreational needs. This is consistent with the objective of maximizing the potential for open space and visual experiences.
	Goal RC-9	To promote the continuation of agricultural uses in the Manteca area and to discourage the premature conversion of agricultural land to nonagricultural uses, while providing for the urban development needs of Manteca.	**Consistent.** The project site was annexed into the city limits in the 1996. As such, the City previously contemplated the conversion of the project site from agricultural to urban use. In the event that the proposed project is delayed or developed in phases, there are no restrictions that prevent the continuation of agricultural activities on the project site until urban development is imminent.
	Policy RC-P-19	The City shall support the continuation of agricultural uses on lands designated for urban use, until urban development is imminent.	**Consistent.** The project site is designated for urban development and is currently used for agricultural uses. In the event that the proposed project is delayed or developed in phases, there are no restrictions that prevent the continuation of agricultural activities on the project site until urban development is imminent.
	Policy RC-P-20	The City shall provide an orderly and phased development pattern so that farmland is not subjected to premature development pressure.	**Consistent.** The project site is contiguous to existing urban development, including Oakwood Shores to the north and the Islander Mobile Home Park to the west. In addition, planned residential developments are located to the north and east. As such, the development of the proposed project would be considered orderly and phased.
	Policy RC-P-21	In approving urban development near existing agricultural lands, the City shall take actions so that such development will not	**Consistent.** The proposed project identifies the use of setbacks and landscaping to buffer the proposed residential uses from surrounding land uses, including agricultural uses.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
		unnecessarily constrain agricultural practices or adversely affect the viability of nearby agricultural operations.	These buffers are consistent with the objective of avoiding the creation of constraints or pressures on nearby agricultural uses.
	Policy RC-P-24	Provide buffers at the interface of urban development and farmland; in order to minimize conflicts between these uses.	**Consistent.** The proposed project identifies the use of setbacks and landscaping to buffer the proposed residential uses from surrounding land uses, including agricultural uses.
	Policy RC-P-25	The City shall ensure, in approving urban development near existing agricultural lands, that such development will not unnecessarily constrain agricultural practices or adversely affect the economic viability of nearby agricultural operations.	**Consistent** The proposed project identifies the use of setbacks and landscaping to buffer the proposed residential uses from surrounding land uses, including agricultural uses. These buffers are consistent with the objective of avoiding the creation of constraints or pressures on nearby agricultural uses.
	Policy RC-P-27	The City shall discourage the cancellation of Williamson Act contracts outside the Primary Urban Service Boundary line.	**Consistent.** This project site is encumbered by an existing Williamson Act contract, but is within the Primary Urban Service Boundary line. As such, no conflicts with this policy would occur.
	Policy RC-P-30	The City of Manteca will participate in a county-wide program to mitigate the conversion of Prime Farmland and Farmlands of Statewide Importance to urban uses.	**Consistent.** This EIR requires the project applicant to pay the City of Manteca Agricultural Mitigation Fee to mitigate for the loss of Important Farmland. This fee is the fee program contemplated by this policy. Refer to Section 3.2, Agricultural Resources for further discussion.
	Goal RC-10	Protect sensitive native vegetation and wildlife communities and habitat in Manteca.	**Consistent.** This EIR requires that mitigation for impacts to special-status species and jurisdictional features. These mitigation measures are consistent with the objective of protecting sensitive native vegetation and wildlife communities and habitat. Refer to Section 3.4, Biological Resources for further discussion.
	Policy RC-P-31	Minimize impact of new development on native vegetation and wildlife.	**Consistent.** This EIR requires that mitigation for impacts to special-status species and jurisdictional features. These mitigation measures are

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
			consistent with the objective of minimizing the impact of new development on native vegetation and wildlife. Refer to Section 3.4, Biological Resources for further discussion.
	Policy RC-P-32	Condition new development in the vicinity of the San Joaquin River and Walthall Slough to protect riparian habitat, wetlands, and other native vegetation and wildlife communities and habitats.	**Consistent.** The proposed project does not propose any development on the 177 acres adjacent to Walthall Slough. This is consistent with protecting riparian habitat, wetlands, and other native vegetation and wildlife communities and habitats. Refer to Section 3.4, Biological Resources for further discussion.
	Policy 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 project site contains an existing almond orchard. The applicant intends to maintain agricultural activities on the project site until urban development is imminent.
	Policy RC-P-34	Protect special status species and other species that are sensitive to human activities.	**Consistent.** This EIR requires that mitigation for impacts to special-status species and jurisdictional features. These mitigation measures are consistent with the objective of protecting special-status species. Refer to Section 3.4, Biological Resources for further discussion.
	Goal RC-11	Preserve and enhance Manteca's archaeological and historic resources for their aesthetic, educational, and cultural values.	**Consistent.** This EIR evaluates potential impacts on archaeological and historic resources and sets forth mitigation measures to ensure that impacts are reduced to a level of less than significant. This is consistent with the objective of preserving and enhancing Manteca's archaeological and historic resources. Refer to Section 3.5, Cultural Resources for further discussion.
	Goal RC-12	Protect Manteca's Native American heritage.	**Consistent.** This EIR evaluates potential impacts on archaeological and historic resources and sets forth mitigation measures to ensure that impacts are reduced to a level of less than significant. This is consistent with the objective of protecting Manteca's

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
			Native American heritage. Refer to Section 3.5, Cultural Resources for further discussion.
	Policy RC-P-37	The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without consulting the California Archaeological Inventory at Stanislaus State University, conducting a site evaluation as may be indicated, and attempting to mitigate any adverse impacts according to the recommendation of a qualified archaeologist. City implementation of this policy shall be guided by the California Environmental Quality Act (CEQA) and the National Historic Preservation Act (NHPA).	**Consistent.** This EIR evaluates potential impacts on archaeological and historic resources and sets forth mitigation measures to ensure that impacts are reduced to a level of less than significant. The analysis was prepared by a qualified archaeologist and includes recommendations for mitigating potential impacts. These recommendations have been incorporated as mitigation measures in this EIR. Refer to Section 3.5, Cultural Resources for further discussion.
	Policy RC-P-38	The City shall require that the proponent of any development proposal in an area with potential archaeological resources, and specifically near the San Joaquin River and Walthall Slough, and on the east side of State Highway 99 at the Louise Avenue crossing, shall consult with the California Archaeological Inventory, Stanislaus State University to determine the potential for discovery of cultural resources, conduct a site evaluation as may be indicated, and mitigate any adverse impacts according to the recommendation of a qualified archaeologist. The survey and mitigation shall be developer funded.	**Consistent.** The project site is adjacent to Walthall Slough. This EIR evaluates potential impacts on archaeological and historic resources and sets forth mitigation measures to ensure that impacts are reduced to a level of less than significant. The assessment was prepared by a qualified archaeologist and included a record search at the California Archaeological Inventory, Stanislaus State University, and a field survey. Note that the portion of the project site adjacent to Walthall Slough will remain in agricultural production and will not be developed. Refer to Section 3.5, Cultural Resources for further discussion.
9 – Noise Element	Goal N-1	Protect the residents of Manteca from the harmful and annoying effects of exposure to excessive noise.	**Consistent:** The Draft EIR's noise analysis evaluates potential construction and operational noise impacts to surrounding land uses and

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
			identifies mitigation measures where necessary to reduce noise levels. This is consistent with the objective of protecting Manteca residents from the harmful and annoying effects of exposure to excessive noise. Refer to Section 3.10, Noise for further discussion.
	Goal N-2	Protect the quality of life in the community and the tourism economy from noise generated by incompatible land uses.	**Consistent:** The proposed project is not being developed as an incompatible land uses. Surrounding areas are anticipated to be developed with similar compatible land uses. This is consistent with the objective of protecting quality of life from the noise generated from incompatible land uses. Refer to Section 3.10, Noise for further discussion.
	Goal 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.	**Consistent:** The Draft EIR's noise analysis evaluates potential construction and operational noise impacts to surrounding land uses and identifies mitigation measures where necessary to reduce noise levels. This is consistent with the objective of protecting Manteca residents from the harmful and annoying effects of exposure to excessive noise. Refer to Section 3.10, Noise for further discussion.
	Goal 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.	**Consistent.** The Draft EIR's noise analysis evaluates potential construction and operational noise impacts to surrounding land uses and identifies mitigation measures where necessary to reduce noise levels. Furthermore, the proposed project incorporates noise attenuation features such as building setbacks, walls, and landscaping along roadways, as well as orienting outdoor living areas away from roadways. The characteristics are consistent with the objective of incorporating noise considerations into land use planning decisions in order to minimize the effects of noise on adjacent land uses. Refer to Section 3.10, Noise for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy N-P-1	Areas within Manteca exposed to existing or projected exterior noise levels from mobile noise sources exceeding the performance standards in Table 9-1 shall be designated as noise-impacted areas.	**Consistent:** The Draft EIR's noise analysis found that existing ambient noise levels within the project vicinity were as high as 67.0 dBA L_{eq} (as measured over a 1-hour period) and 65.7 dBA CNEL (as measured over a 24-hour period), with most of the noise being attributable to mobile sources. As such, the project vicinity is eligible to be designated as a "noise impacted area" under existing conditions. Refer to Section 3.10, Noise for further discussion.
	Policy 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.	**Consistent:** Because the project site is located in a noise-impacted area, the proposed project incorporates noise attenuation features such as building setbacks, walls, and landscaping along roadways, as well as orienting outdoor living areas away from roadways. With the implementation of the measures, the proposed project's residential uses would achieve the performance standards in Table 9-1. Refer to Section 3.10, Noise for further discussion.
	Policy 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.	**Consistent.** The Draft EIR's construction noise analysis assessed impacts based on the standards set forth in Table 9-2. Mitigation is proposed requiring the clubhouse to limit outdoor activities to between the hours of 7 a.m. and 10 p.m. in order to achieve the Table 9-2 performance standards. Refer to Section 3.10, Noise for further discussion.
	Policy N-P-5	In accord with the Table 9-2 standards, the City shall regulate construction-related noise impacts on adjacent users.	**Consistent.** The Draft EIR's construction noise analysis assessed impacts based on the standards set forth in Table 9-2. Mitigation is proposed, where necessary, to reduce construction noise exposure to acceptable levels. Refer to Section 3.10, Noise for further discussion.
	Policy N-P-6	Where the development of residential or other noise-sensitive land use is proposed for a noise-impacted area, an	**Consistent.** The Draft EIR includes a Noise Study prepared by a qualified acoustical consultant. The analysis included onsite and offsite noise

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
		acoustical analysis is required as part of the environmental review process so that noise mitigation may be considered in the project design. The acoustical analysis shall: • Be the responsibility of the applicant. • Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics. • Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise sources. • Estimate existing and projected (20 years) noise levels in terms of the standards of Table 9-1 or Table 9-2, and compare those levels to the adopted policies of the Noise Element. • Recommend appropriate mitigation measures to achieve compliance with the adopted policies and standards of the Noise Element. • Estimate noise exposure after the prescribed mitigation measures have been implemented. • Describe a post-project assessment program that could be used to monitor the effectiveness of the proposed mitigation measures.	measurements. Noise levels were assessed against the standards set forth in Table 9-1 and Table 9-2, as appropriate. Mitigation is proposed, where necessary, to reduce noise exposure to acceptable levels. Refer to Section 3.10, Noise for further discussion.
	Policy N-P-8	The City shall enforce the Sound Transmission Control Standards of the California	**Consistent.** The proposed project's multi-family residential dwelling units will comply with Sound Transmission

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
		Building Code concerning the construction of new multiple occupancy dwellings such as hotels, apartments, and condominiums.	Control Standards in the latest adopted edition of the California Building Code at the time building permits are sought.
	Policy N-P-12	The City shall require new roadways to be mitigated so as to not exceed the noise levels specified in Table 9-1. Widening or other improvement projects of existing roadways shall be mitigated to the most practical extent.	**Consistent.** The proposed project would improve E. Woodward Avenue and S. Woodward Avenue. Sound walls would be provided along the project frontage with both roadways to attenuate roadways noise to acceptable levels. Refer to Section 3.10, Noise for further discussion.
10 – Air Quality Element	Goal AQ-1	Improve air quality by: • Achieving and maintaining ambient air quality standards established by the U.S. Environmental Protection Agency, the California Air Resources Board, and the San Joaquin Air Pollution Control District; • Minimizing public exposure to toxic or hazardous air pollutants; and • Minimizing public exposure to pollutants that create a public nuisance, such as unpleasant odors.	**Consistent:** The proposed project will be subject to regulatory measures adopted to meet ambient air quality standards. The proposed project would not be source of significant toxic or hazardous air pollutants and odors. Refer to Section 3.3, Air Quality for further discussion.
	Goal AQ-2	Integrate air quality planning with land use and transportation planning processes in order to reduce vehicle miles traveled in the City and by commuters.	**Consistent.** The proposed project would be accessible to public transit and would provide bicycle and pedestrian facilities. This is consistent with the objective of reducing vehicle miles traveled.
	Goal AQ-3	Increase opportunities for alternatives to internal combustion automobiles including, but not limited to, public transportation, bicycles, walking and alternative fuel vehicles including hybrid gas-electric, electric and compressed natural gas.	**Consistent.** The proposed project would be accessible to public transit and would provide bicycle and pedestrian facilities. This is consistent with the objective of providing additional opportunities for alternatives to internal combustion automobiles.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Goal AQ-4	Reduce air emissions through energy conversation.	**Consistent.** The project design standards and guidelines include provisions for sustainable design features.
	Policy AQ-P-4	Develop and maintain street systems that provide for efficient traffic flow and thereby minimize air pollution from automobile emissions.	**Consistent.** The proposed project includes an internal circulation system that improvements along all roadway frontages that would include additional travel and turn lanes. In addition, the applicant will be required to provide all traffic-related fees in accordance with the latest adopted fee schedule and also provide fair-share fees for offsite roadway improvements. Collectively, these characteristics would reduce tailpipe emissions.
	Policy AQ-P-5	Develop and maintain circulation systems that provide alternatives to the automobile for transportation, including bicycles routes, pedestrian paths, bus transit, and carpooling.	**Consistent:** The proposed project includes the development of public transit, bicycle, and pedestrian facilities.
	Policy AQ-P-7	New construction will be managed to minimize fugitive dust and construction vehicle emissions.	**Consistent.** The development of project will be subject to SJVAPCD Regulation VIII, which requires fugitive dust control measures for construction projects and SJVAPCD Rule 9510, which requires emission reductions from construction vehicle emissions. Refer to Section 3.3, Air Quality for further discussion.
	Policy AQ-P-10	Encourage energy efficient building designs.	**Consistent.** The project design standards and guidelines include provisions for sustainable design features.
11 – Administration and Implementation Element	Policy AD-P-3	The General Plan may be amended no more than four times per year. Each amendment, however, may include multiple changes to the General Plan.	**Consistent.** The General Plan Amendment associated with the proposed project will be processed in accordance with this policy.
	Policy AD-P-4	The City's Zoning Ordinance and Subdivision Ordinance shall be reviewed and amended as necessary to ensure consistency with the General Plan.	**Consistent.** The City's Zoning Ordinance will be updated to incorporated applicable aspects of the proposed project. In addition, the Zoning Map will be updated to reflect the new zoning.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy AD-P-5	The City shall prepare and adopt, as deemed necessary, specific plans for new development areas.	**Consistent.** Although the proposed project is not a specific plan, the proposed Planned Development overlay is consistent with the objective of using a comprehensive land use plan to guide urban development in an orderly, well-planned manner.
12 – Housing Element	Goal H-1	Encouraging New Development The City seeks to encourage the development of housing units affordable to all segments of the population through financial and regulatory incentives and aggressive land use planning. To provide a range of housing types, densities, designs, and meet existing and projected housing needs for all economic of the community.	**Consistent.** The proposed project provides a mix of housing types, including single-family detached units, townhome/garden apartments, and apartments. Units would be available for purchase or rental. These characteristics are consistent with the objective of providing a range of housing types, densities, and designs.
	Policy H-P-3	The City shall establish adequate residential zoning to accommodate the housing needs established in the Regional Housing Needs Assessment (RHNA).	**Consistent.** The proposed General Plan Amendment and rezone would allow the development of single-family and multi-family residential uses on the project site and, therefore, be consistent with the intent of this policy.
	Policy H-P-7	The City shall establish residential zoning to achieve a mix of single family and multi-family development that will provide adequate housing opportunities for households of all income levels.	**Consistent.** The proposed General Plan Amendment and rezone would allow the development of single-family and multi-family residential uses on the project site and, therefore, be consistent with the intent of this policy.
	Policy H-P-12	The City shall strive to ensure that affordable units are distributed in suitable locations throughout the city that are proximate to retail services, parks, schools, public facilities and public transit.	**Consistent.** The proposed project is expected to provide affordable units onsite. These units would be accessible to the parks, open space, trails, public transit, and school facilities available in the project vicinity. The provision of these units within the proposed would be consistent with the objective of distributing units in suitable locations throughout the City.
	Policy H-P-13	Below market rate affordable residential units in	**Consistent.** Below market rate dwelling units developed within the

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
		development areas shall be similar to the market rate units in exterior style and materials.	proposed project would be similar to the market rate units in exterior style and materials.
	Goal H-2	Removing Barriers to Affordable Housing Development The City will seek to remove, where legally possible, governmental constraints that constrain the maintenance, improvement, and development of housing. To promote the development of affordable housing in the City of Manteca.	**Consistent.** The proposed project is being processed in a timely manner in accordance with state law and city procedures.
	Policy H-P-23	The City shall promote the expeditious processing and approval of residential projects that meet General Plan policies and City regulatory requirements.	**Consistent.** The proposed project is being processed in a timely manner in accordance with state law and city procedures.
	Goal H-3	Maintaining and Preserving Existing Housing To ensure the provision of adequate services to support existing and future residential development.	**Consistent.** The proposed project would be adequately served by city services, including fire, police, potable water, sewer, and storm drainage. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy H-P-36	The City shall work with the Manteca Unified School District to ensure the availability of adequate school facilities to meet the needs of projected households in Manteca.	**Consistent.** The Manteca Unified School District was consulted about the proposed project's need for new school facilities. The proposed project would provide fee payments to the School District for capital improvements to school facilities. In addition, the School District has secured land and plans to build new schools in the project vicinity. Refer to Section 3.12, Public Services and Utilities for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy H-P-38	The City will maintain an adequate level of public services and infrastructure to meet the needs of existing and projected development, within the fiscal capacity of the City.	**Consistent.** The proposed project contains provisions for public facilities and services. In addition, the proposed project would provide the full cost of necessary onsite infrastructure and utility improvements and would provide development fees to public service providers. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy H-P-39	The City shall ensure within fiscal limitations that park and recreation facility acquisitions and improvements keep pace with residential development.	**Consistent.** The project applicant will provide park development fees to the City of Manteca at the time building permits are sought, which could be used for park and recreation facility acquisitions and improvements.
	Policy H-P-40	The City shall ensure that housing developments pay their own way in terms of financing public facilities and services.	**Consistent.** The proposed project contains provisions for public facilities and services. In addition, the proposed project would provide the full cost of necessary onsite infrastructure and utility improvements and would provide development fees to public service providers. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal H-6	Reducing Ongoing Housing Expenditures The following goals, policies, and implementation programs are provided in an attempt to reduce total housing costs by reducing ongoing operation and maintenance costs of housing. To encourage energy efficient residential and neighborhood designs that make reduce total housing costs by reducing ongoing operation and maintenance costs.	**Consistent.** The proposed project design standards and guidelines include provisions for sustainable design features to reduce energy use.
	Policy H-P-49	The City shall promote the use of energy conservation features in the design of all new residential structures.	**Consistent.** The proposed project design standards and guidelines include provisions for sustainable design features to reduce energy use.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Chapter	Goal/Policy		Consistency Determination
	No.	Text	
	Policy H-P-50	The City shall encourage residential construction of durable materials and designs suited to the local conditions that will contribute to reduction of the life-cycle cost of the dwelling.	**Consistent.** The proposed project design standards and guidelines include provisions for sustainable design features and durable materials that suit the local conditions.
	Goal H-7	Energy conservation Residential energy costs can impact the affordability of housing in that increasing utility costs decrease the amount of income available for rents or mortgage payments. Manteca has many opportunities to directly affect energy use within its jurisdiction. Title 24 of the California Administrative Code sets forth mandatory energy standards for new housing development, and requires adoption of an "energy budget." Some of the alternative ways to meet the State energy standards include: Alternative 1: The passive solar approach, which requires proper solar orientation, appropriate levels of thermal mass, south facing windows, and moderate insulation levels. Alternative 2: Generally requires higher levels of insulation than Alternative 1, but has no thermal mass or window orientation requirements. Alternative 3: Also is without passive solar design, but requires active solar water heating in exchange for less stringent insulation and/or glazing requirements.	**Consistent.** The proposed project design standards and guidelines include provisions for sustainable design features to reduce energy use.
Source: City of Manteca, 2010; Michael Brandman Associates, 2010.			

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Municipal Code Consistency

Impact LU-3: The proposed project would be consistent with the applicable provisions of the Manteca Municipal Code.

Impact Analysis

This impact will evaluate the consistency of the proposed project with applicable portions of the Manteca Municipal Code.

The proposed project involves rezoning the project site from Planned Employment Center to Single-Family Residential (R-1), Multiple-Family Residential/Institutional (R-4), Open Space (O-S), with Planned Development overlay. The Planned Development (PD) overlay establishes the Low Density Residential, High Density Residential, and Open Space land use categories that are identical to the land use categories of the Manteca General Plan. The proposed Planned Development (PD) overlay that would be incorporated into the Manteca Municipal Code would guide the development of the project site, consistent with the proposed General Plan designations of Low Density Residential, High Density Residential, and Open Space.

Development projects will be subject to the Site Plan Review and Design Review requirements of Manteca Municipal Code Section 17.49.040. The City may impose, in connection with the site plan and design review process, reasonable conditions of approval if they are consistent with the Planned Development (PD) overlay. In summary, the proposed project complies with all applicable requirements of the Manteca Municipal Code.

The proposed Planned Development (PD) overlay would be adopted into the Municipal Code and, therefore, represents a self-mitigating aspect of the proposed project. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Conservation Plan Consistency

Impact LU-4:	**The proposed project may not be consistent with the applicable policies of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.**

Impact Analysis

The project site is within the boundaries of the SJMSCP and is subject to the plan requirements. The project site is designated "Urban Lands" by the SJMSCP Planned Land Use Map by virtue of it having been within the Manteca city limits at the time the plan took effect on January 1, 2001. As such, the SJMSCP contemplates urban development on this site and, therefore, the development of the proposed project would not conflict with the provisions of the plan.

The project site is within the Category A (No Pay), Category B (Other Open Space), and Category C (Agricultural Habitat Open Space) fee zones of the SJMSCP. Development activities within Category B and Category C require payment of fees to compensate for the loss of habitat. As such, Mitigation Measure BIO-6 requires payment of fees at the time grading permits are sought. With the implementation of this mitigation measure, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure BIO-6.

Level of Significance After Mitigation

Less than significant impact.

3.10 - Noise

3.10.1 - Introduction

This section describes the existing noise setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on noise modeling performed by Michael Brandman Associates. The noise modeling output is included in this EIR as Appendix I.

3.10.2 - Environmental Setting

Noise Fundamentals

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit that expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating between very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies that are audible to the human ear. The scale value of zero is the threshold of human hearing.

Noise Descriptors

Noise equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (L_{eq}) represents a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. The peak traffic hour L_{eq} is the noise metric used by California Department of Transportation (Caltrans) for all traffic noise impact analyses.

The Day-Night Average Level (L_{dn}) is the weighted average of the intensity of a sound, with corrections for time of day and averaged over 24 hours. The time of day corrections require the addition of 10 decibels to sound levels at night between 10 p.m. and 7 a.m. While the Community Noise Equivalent Level (CNEL) is similar to the L_{dn}, it has another addition of 4.77 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these periods because, compared with daytime hours, there is a decrease in the ambient noise levels during the evening and nighttime hours, which creates an increased sensitivity to sounds. For this reason, the sound seems louder in the evening and nighttime hours and is weighted accordingly. Because of the additional evening penalty CNEL values are always higher than L_{dn} values; however, the difference is usually within 1 dB. Since CNEL and L_{dn} values are approximately the same, the City of Manteca General Plan Noise Element uses CNEL and L_{dn} noise descriptors interchangeably. However, since stationary noise standards in the Noise Element are based on the same daytime and

nighttime split that is used for L_{dn}, the L_{dn} standard has been used in this analysis to assess transportation-related impacts on noise-sensitive land uses.

Another noise descriptor that is used primarily for the assessment of aircraft noise impacts is the Sound Exposure Level, which is also called the Single Event Level (SEL). The SEL descriptor represents the acoustic energy of a single event (e.g., an aircraft overflight) normalized to a 1-second event duration. This is useful for comparing the acoustical energy of different events involving different durations of the noise sources. The SEL is based on an integration of the noise during the period when the noise first rises within 10 dBA of its maximum value and last falls below 10 dBA of its maximum value. The SEL is often 10 or more dBA greater than the L_{max}, since the SEL logarithmically adds the L_{eq} for each second of the duration of the noise.

Tone Noise

A pure tone noise is a noise produced at a single frequency and laboratory tests have shown the humans are more perceptible to changes in noise levels of a pure tone. For a noise source to contain a "pure tone," there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to "stand out" against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contiguous one-third octave bands by:

- 5 dB for center frequencies of 500 hertz (Hz) and above
- 8 dB for center frequencies between 160 and 400 Hz
- 15 dB for center frequencies of 125 Hz or less

Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source, ground absorption, atmospheric effects and refraction, and shielding by natural and man-made features. Sound from point sources such as air conditioning condensers radiate uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models: soft-site and hard-site conditions. Soft-site conditions

account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, compared with a 6.0-dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone, and very hard, packed earth. For line sources, a 4.5-dBA/DD drop-off rate is typically observed for soft-site conditions compared with the 3.0-dBA/DD drop-off rate for hard-site conditions. Caltrans research has shown that the use of soft-site conditions is more appropriate for the application of the Federal Highway Administration (FHWA) traffic noise prediction model used in this analysis.

Traffic Noise Prediction

The level of traffic noise depends on the three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires. Because of the logarithmic nature of traffic noise levels, a doubling of the traffic volumes results in a noise level increase of 3 dBA. Based on the FHWA community noise assessment criteria, this change is "barely perceptible," for reference a doubling of perceived noise levels would require an increase of approximately 10 dBA. In other words, doubling the traffic volume (assuming that the speed and truck mix do not change) results in a noise increase of 3 dBA. The truck mix on a given roadway also has an effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. For a noise barrier to work, it must be high enough and long enough to block the view of a road. A noise barrier is most effective when placed close to the noise source or receiver. A noise barrier can achieve a 5-dBA noise level reduction when it is tall enough to break the line of sight. When the noise barrier is a berm instead of a wall, the noise attenuation can be increased by another 3 dBA.

Construction Noise Assumptions

The Federal Highway Administration (FHWA) compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table 3.10-1 provides a list of the construction equipment measured along with the associated noise emissions and measured percentages of typical equipment use per day. From this acquired data, the FHWA developed the Roadway Construction Noise Model (RCNM), which may be used for the prediction of construction noise. For the purposes of this analysis, the RCNM will be used to calculate the construction equipment noise emissions.

Table 3.10-1: Construction Equipment Noise Emissions and Usage Factors

Equipment	Acoustical Use Factor[1] (percent)	Spec 721.560 L_{max} @ 50 feet[2] (dBA, slow[3])	Actual Measured L_{max} @ 50 feet[4] (dBA, slow)
Auger Drill Rig	20	85	84
Backhoe	40	80	78
Bar Bender	20	80	N/A
Compactor (ground)	20	80	83
Compressor (air)	40	80	78
Concrete Batch	15	83	N/A
Concrete Mixer Truck	40	85	79
Concrete Pump	20	82	81
Concrete Saw	20	90	90
Crane	16	85	81
Dozer	40	85	82
Dump Truck	40	84	76
Excavator	40	85	81
Flat Bed Truck	40	84	74
Front End Loader	40	80	79
Generator	50	82	81
Grader	40	85	N/A
Jackhammer	20	85	89
Paver	50	85	77
Pneumatic Tools	50	85	85
Pumps	50	77	81
Roller	20	85	80
Scraper	40	85	84
Tractor	40	84	N/A
Vibrating Hopper	50	85	87
Vibratory Concrete Mixer	20	80	80
Welder/Torch	40	73	74

Notes:
[1] Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.
[2] Spec 721.560 is the equipment noise level utilized by the RCNM program.
[3] The "slow" response averages sound levels over 1-second increments. A "fast" response averages sound levels over 0.125-second increments.
[4] Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.
Source: Federal Highway Administration, 2006.

Groundborne Vibration Fundamentals

Groundborne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of groundborne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although groundborne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Groundborne noise is an effect of groundborne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may consist of the rattling of windows or dishes on shelves.

Vibration Descriptors

Several different methods are used to quantify vibration amplitude, such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Because of the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels; it is denoted as (L_v) and is based on the rms velocity amplitude. A commonly used abbreviation is "VdB," which in this text, is when L_v is based on the reference quantity of 1 microinch per second.

Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans, whose threshold of perception is around 65 VdB. Offsite sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible groundborne noise or vibration.

Vibration Propagation

The propagation of groundborne vibration is not as simple to model as airborne noise. This is because noise in the air travels through a relatively uniform medium, while groundborne vibrations travel through the earth, which may contain significant geological differences. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a push-pull fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or side-to-side and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly, depending on the soil, but it has been

shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

Construction-Related Vibration Level Prediction

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table 3.10-2 gives approximate vibration levels for particular construction activities. The data in the table provides a reasonable estimate for a wide range of soil conditions.

Table 3.10-2: Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity (inches/second)	Approximate Vibration Level (L_v) at 25 feet
Pile driver (impact)	1.518 (upper range) 0.644 (typical)	112 104
Pile driver (sonic)	0.734 (upper range) 0.170 (typical)	105 93
Clam shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall)	0.008 (in soil) 0.017 (in rock)	66 75
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58
Source: Federal Transit Administration, 2006.		

Existing Noise Levels

Noise in the study area is primarily created from vehicles on the nearby roadways, State Route 120 (SR-120), and Intestate 5 (I-5), railroad noise from the Union Pacific Railroad to the northwest, and from the operation of agricultural equipment. The nearby sensitive receptors consist of single-family residential homes and a mobile home park located on the west side of the project site and single-family home lots north of the project site.

To determine the existing noise level environment, short-term, peak-hour noise measurements were taken at three locations in the study area, and two long-term noise measurements were taken on the

project site. Noise measurement locations were selected in the field based on the methodology presented in Section 5.3.1.2 of the Caltrans Technical Noise Supplement with the intent of representatively sampling of the existing noise environment. Exhibit 3.10-1 depicts the noise measurement locations.

Noise Measurement Results

Short-Term Peak Noise Measurements

Short-term peak measurements were taken at three locations in the vicinity of the project site. The results of the short-term, peak-hour noise level measurements are presented in Table 3.10-3, and the short-term noise monitoring data printouts are included in Appendix I. All traffic noise measurement durations were measured according to the standards stated in Section 2.2.3 of the Caltrans Technical Noise Supplement, which specifies that the measurements be a duration of at least 10 minutes and shall be continued past 10 minutes until the fluctuations in the displayed L_{eq} are less than 0.5 dBA.

Table 3.10-3: Existing (Ambient) Short-Term Noise Level Measurements

Site No.	Site Description	Primary Noise Source	Start Time and Measurement (minutes)	Noise Level (dBA L_{eq}/L_{max})
M1	Located west of the project site at the Islander Mobile Home Park, approximately 80 feet west of the centerline of S. Woodward Avenue.	Traffic noise from S. Woodward Avenue and I-5.	4:21 p.m. (15:00)	50.6/68.3
			7:22 a.m. (15:00)	49.6/69.3
M2	Located northeast of the project site, approximately 110 feet west of the centerline of McKinley Avenue and 900 feet south of the centerline of SR-120.	Traffic noise from SR-120 and McKinley Avenue.	4:43 p.m. (18:00)	58.2/75.8
			7:43 a.m. (15:00)	54.9/62.9
M3	Located east of the project site, approximately 60 feet north of the centerline of E. Woodward Avenue, approximately 20 feet north of an 8-foot-high block wall, and approximately 110 feet south of the centerline of Ancestry Street.	Traffic noise from E. Woodward Avenue and SR-120	5:06 p.m. (16:00)	51.5/61.1
			8:03 a.m. (16:00)	49.7/64.6

Notes:
Noise measurements taken on September 20 and 21, 2010.
Source: Michael Brandman Associates, 2010.

The peak hour noise measurements shown above in Table 3.10-3 ranged from 49.6 to 58.2 dBA L_{eq}, with the highest noise measurement at Site M2. According to Section 2.2.3 of the Caltrans Technical Noise Supplement, the L_{dn} values are generally within ± 2 dBA of the measured peak-hour L_{eq} dBA. Based on the worst-case L_{eq} to L_{dn} conversion, all sites except M2 would be within the City's 60-dB L_{dn} residential noise standard.

Long-Term Noise Measurement Results

Two long-term noise measurements were taken from 4:05 p.m. on September 20, 2010 and ran until 3:54 p.m. on September 21, 2010. The measured sound pressure levels in dBA have been used to calculate (1) the minimum and maximum L_{eq} averaged over 1-hour intervals, and (2) the 24-hour L_{dn} and CNEL, which are shown in Table 3.10-4 along with the measured L_{eq} averaged over the entire measurement time. In addition, a graph of the calculated L_{eq} averaged over 1-hour intervals for both of the long-term measurements is shown in Exhibit 3.10-2.

Table 3.10-4: Existing (Ambient) Long-Term Noise Level Measurement

Site	Site Description	24-Hour Average (dBA L_{eq})	Minimum 1-Hour Interval (dBA L_{eq}/Time)	Maximum 1-Hour Interval (dBA L_{eq}/Time)	24-Hour Average (dBA L_{dn})	24-Hour Average (dBA CNEL)
A	Located on the west side of the project site, approximately 50 feet east of the centerline of S. Woodward Avenue and across the street from the existing residential uses.	55.4	45.5/ 1:47 a.m.	62.5/ 6:43 p.m.	59.9	60.1
B	Located at the northeast corner of the project site, approximately 70 feet south of E. Woodward Avenue.	62.2	45.7/ 1:34 a.m.	67.0/ 1:42 p.m.	65.6	65.7

Notes:
Noise measurements taken on September 20 and 21, 2010.
Source: Michael Brandman Associates, 2010.

The noise measurement results show that only Site B exceeds the City's exterior noise standards of 60 dBA L_{dn} for noise sensitive areas. The long-term noise monitoring data printouts are included in Appendix I.

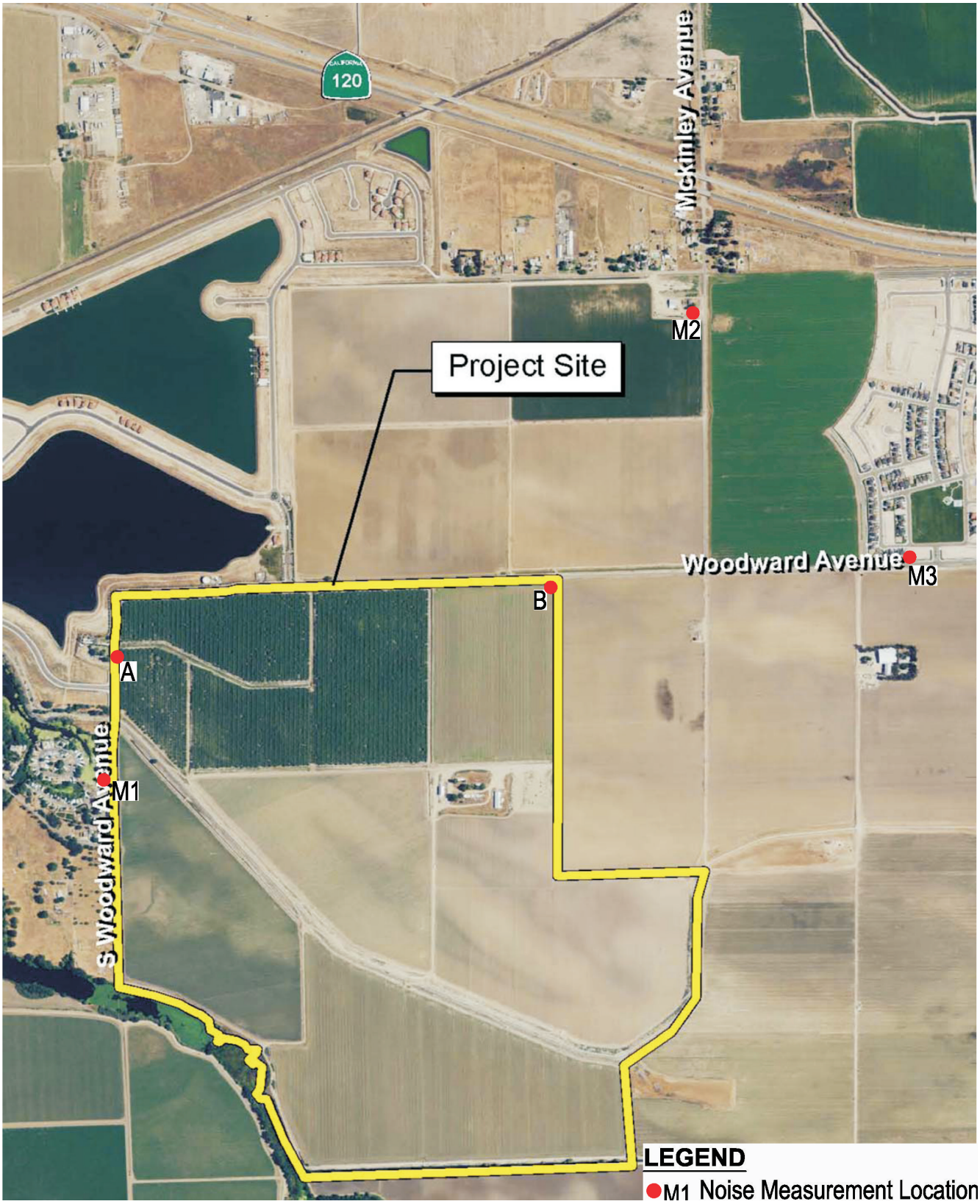
3.10.3 - Regulatory Framework

State

Noise Standards

Established in 1973, the California Department of Health Services Office of Noise Control was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the "Land Use Compatibility for Community Noise Environments Matrix," which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise, which is shown in Exhibit 3.10-3.

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL.

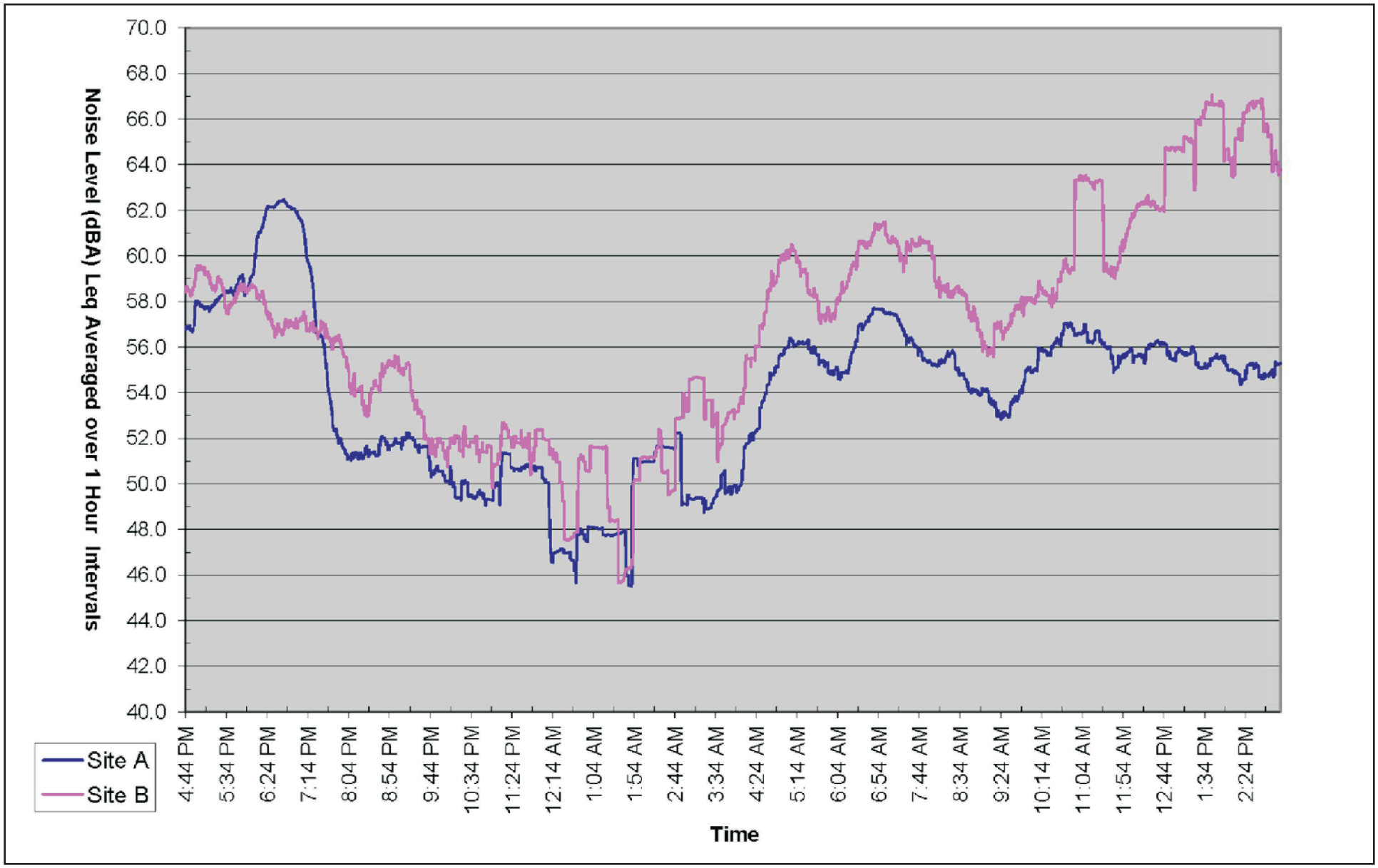


Source: San Joaquin County NAIP, 2009. Dahlin Group Architecture Planning, July 2010.

NORTH

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Exhibit 3.10-1
Noise Measurement Locations

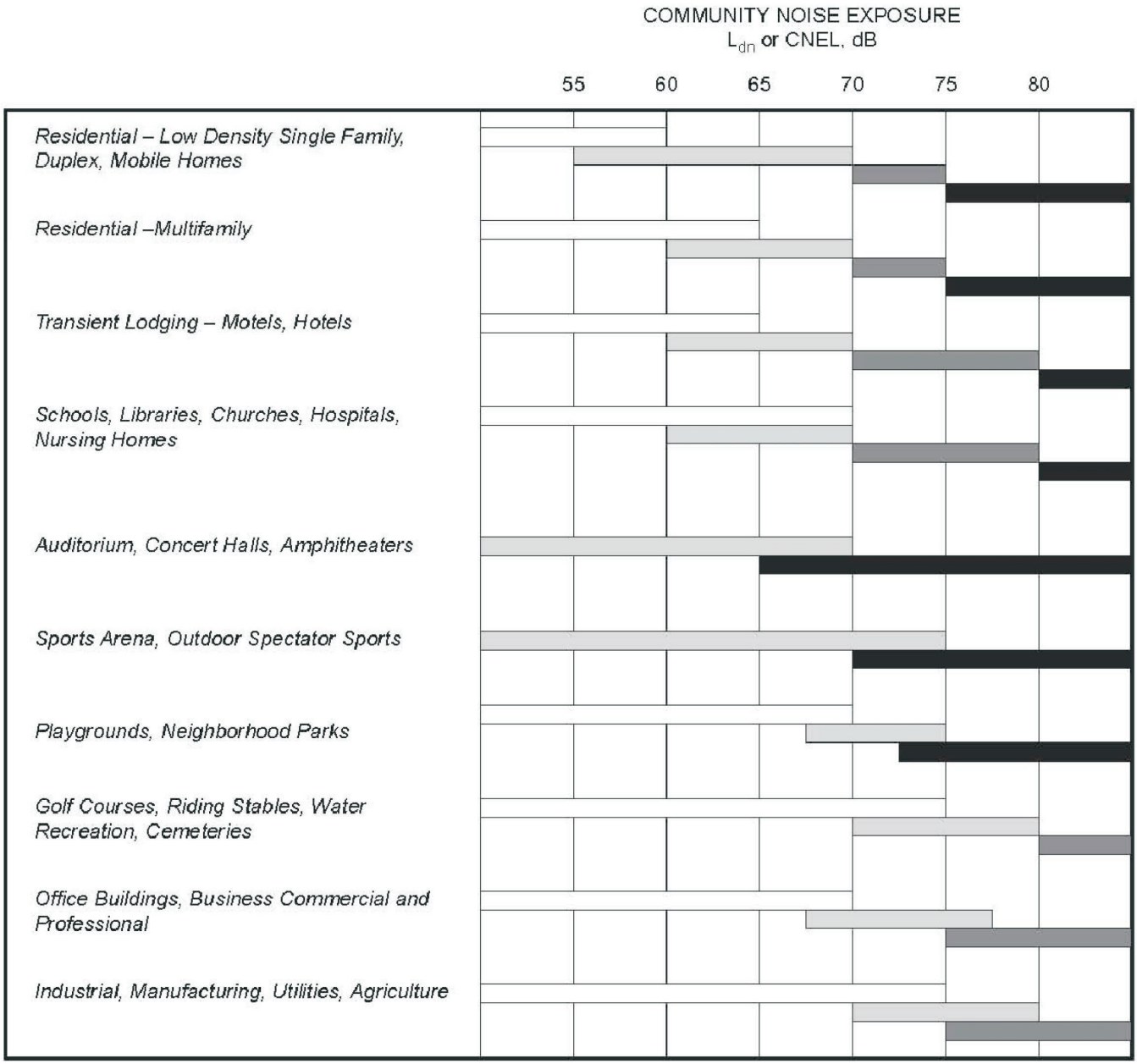


Source: Extech Model 407780 Type 2 Integrating Sound Level Meters.

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Exhibit 3.10-2
Long-Term Noise Measurements Graph



LEGEND:

NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and neede noise insulation features included in the design.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

Source: California Department of Health. *Guidelines for the Preparation and Content of Noise Elements of the General Plan.* November, 1990.

Source: California Department of Health, 1990.

NORTH

Michael Brandman Associates

Exhibit 3.10-3
Land Use Matrix

When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less, due to aircraft noise.

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

Single-Event Noise Descriptors

Noise is rarely regulated by SEL descriptors. As previously discussed, the SEL descriptor represents the acoustic energy of a single event normalized to a 1-second event duration, while L_{dn} and CNEL represent the weighted average of the intensity of noise over a 24-hour period, with adjustments for nighttime noise sensitivity. The City of Manteca General Plan does not establish SEL standards.

However, the courts have indirectly recognized SEL limits for unique circumstances such as sleep disturbance from aircraft overflights (e.g., *Berkeley Keep Jets Over the Bay Com. V. Bd of Port Comrs. of Oakland*, 91 Cal. App. 4th 1344 [2001]). In the Berkeley decision, the court held that impacts to sleep disturbance should be analyzed using the SEL descriptor, in addition to analyzing the L_{dn} or CNEL noise impacts. The ruling did not recommend a specific SEL noise threshold for sleep disturbance. A threshold for sleep disturbance is not absolute, since a high degree of variability exists from one person to another. As a result, no government agencies have suggested what frequencies of awakenings are acceptable. For these reasons, the Federal Interagency Committee on Noise and the California Airport and Land Use Planning Handbook continue to use L_{dn} or CNEL as the primary tool for land use compatibility planning and do not establish SEL standards. Since the L_{dn} and CNEL represent the cumulative exposure to all single events—that is, the exposure of all SELs taken together, weighed to add penalties for nighttime occurrences and averaged over a 24-hour period—the L_{dn} and CNEL-based standards already account for the individual impacts associated with SELs.

Vibration Standards

Title 14 of the California Administrative Code Section 15000 requires that all state and local agencies implement the California Environmental Quality Act (CEQA) Guidelines, which requires the analysis of exposure of persons to excessive groundborne vibration. However, no statute has been adopted by the State that quantifies the level at which excessive groundborne vibration occurs.

Caltrans issued the Transportation- and Construction-Induced Vibration Guidance Manual in 2004. The manual provides practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans

projects. However, this manual is also used as a reference point by many lead agencies and CEQA practitioners throughout California, as it provides numeric thresholds for vibration impacts. Thresholds are established for continuous (construction-related) and transient (transportation-related) sources of vibration, which found that the human response becomes distinctly perceptible at 0.25 inch per second PPV for transient sources and 0.04 inch per second PPV for continuous sources.

Local

City of Manteca

General Plan

The General Plan establishes the following policies associated with noise that are relevant to the proposed project:

N-P-1: Areas within Manteca exposed to existing or projected exterior noise levels from mobile noise sources exceeding the performance standards in Table 9-1 [Table 3.10-5] shall be designated as noise-impacted areas.

N-P-4: The City shall require stationary noise sources proposed adjacent to noise sensitive uses to be mitigated so as to not exceed the noise level performance standards in Table 9-2 [Table 3.10-6].

N-P-5: In accord with the Table 9-2 [Table 3.10-6] standards, the City shall regulate construction-related noise impacts on adjacent uses.

N-P-7: Noise level criteria applied to land uses other than residential or other noise-sensitive uses shall be consistent with noise performance levels of Tables 9-1 [Table 3.10-5] and 9-2 [Table 3.10-6].

N-P-12: The City shall require new roadways to be mitigated so as to not exceed the noise levels specified in Table 9-1 [Table 3.10-5]. Widening or other improvement projects of existing roadways shall be mitigated to the most practical extent.

Table 3.10-5: City of Manteca Maximum Allowable Noise Exposure Mobile Noise Sources

Land Use[4]	Outdoor Activity Area[1]	Interior Spaces	
		L_{dn}/CNEL, dB	L_{eq}, dB[3]
Residential	60[2]	45	—
Transient Lodging	60[2]	45	—
Hospitals, Nursing Homes	60[2]	45	—
Theaters, Auditoriums, Music Halls	—	—	35
Churches, Music Halls	60[2]	—	40
Office Buildings	65	—	45
Schools, Libraries, Museums	—	—	45
Playgrounds, Neighborhood Parks	70	—	—

Table 3.10-5 (cont.): City of Manteca Maximum Allowable Noise Exposure Mobile Noise Sources

Land Use[4]	Outdoor Activity Area[1]	Interior Spaces	
		L_{dn}/CNEL, dB	L_{eq}, dB[3]

Notes:
[1] Outdoor activity areas for residential development are considered 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 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.
[2] In areas where it is not possible to reduce exterior noise levels to 60 dB L_{dn} or below using a practical application of best noise-reduction technology, an exterior noise level of up to 65 dB L_{dn} will be allowed.
[3] Determined for a typical worst-case hour during periods of use.
[4] 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: City of Manteca, 2003.

Table 3.10-6: City of Manteca Performance Standards for Stationary Noise Sources

Noise Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq}, dB	50	45
Maximum Level, dB	70	65

Notes:
[1] 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.
[2] 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: City of Manteca, 2003.

The General Plan establishes the following implementation measures associated with noise that are relevant to the proposed project:

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 the 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.

Municipal Code

The Municipal Code defines the following noise regulations that are relevant to the proposed project:

- **Section 9.52.040 Specific Prohibited Uses**

  Notwithstanding any other provisions of this chapter, the following acts and the causing or permitting thereof, are declared and deemed to be in violation of this chapter:

  D. Engines, Motors and Mechanical Devices Near Residential District. The sustained, continuous or repeated operation or use between the hours of ten p.m. and eight a.m. of any motor or engine or the repair, modification, reconstruction, testing or operation of any automobile, motorcycle, machine, contrivance, or mechanical device or other contrivance or facility unless such motor, engine, automobile, motorcycle, machine or mechanical device is enclosed within a sound insulated structure so as to prevent noise and sound from being plainly audible at the property line of the property from which the sound is emanating.

  F. Loading and Unloading. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building material, garbage cans or similar objects between the hours of 10 p.m. and eight a.m. in such a manner to cause noise disturbance, except for solid waste collection.

  G. Nonemergency Signaling Devices. Sounding or permitting the sounding of any electronically amplified signal from any bell, chime, siren, whistle or similar device, intended primarily for nonemergency purposes, from any place between the hours of ten p.m. and eight a.m. and in no event for more than ten consecutive seconds in any hourly period outside those hours.

  J. Commercial Establishments Adjacent to Residential Property. Notwithstanding any provision of this code to the contrary, continuous, repeated or sustained noise from the premises of any commercial establishment which is adjacent to one or more residential dwelling units, including any outdoor area part of or under the control of the establishment, between the hours of ten p.m. and eight a.m. that is plainly audible from the residential dwelling unit's property line.

  K. Construction Equipment. The use or operation of any construction equipment between the hours of eight p.m. and seven a.m. and is sufficiently loud as to be plainly audible at the property line of the property from which the sound is emanating (Ord. 1374 § 1(part), 2007).

3.10.4 - Methodology

Michael Brandman Associates evaluated the proposed project's noise impacts through noise measurements and modeling of project noise impacts. The analysis is described below.

Measurement Procedure and Criteria

To ascertain the existing noise at and adjacent to the project site, field monitoring was conducted on Monday, September 20, 2010 and Tuesday, September 21, 2010. The field survey noted that noise within the project vicinity is generally characterized by vehicle traffic on E. Woodward Avenue, S. Woodward Avenue, McKinley Avenue, SR-120, and I-5, from rail operations on the Union Pacific Railroad located approximately 0.5 mile to the northwest, and from the existing agricultural uses on the project site. In addition, no aircraft overflights were observed during the noise measurements.

Noise monitoring was performed using two different styles of noise meters for the short-term measurements and the 24-hour measurements, which are described below.

Short-Term Noise Measurements

The short-term noise measurements were taken using a Larson-Davis Model 824 Type 1 precision sound level meter programmed in "slow" mode to record noise levels in "A" weighted form as well as the frequency spectrum of the noise broken down into 1/3 octaves. The sound level meter and microphone were mounted on a tripod 5 feet above the ground and were equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200. The accuracy of the calibrator is maintained through a program established through the manufacturer and is traceable to the National Bureau of Standards. The unit meets the requirements of the ANSI Standard S1.4-1984 and the IEC Standard 942: 1988 for Class 1 equipment. All noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

All traffic noise measurement durations were measured according to the standards stated in Section N-3320 of the Caltrans Technical Noise Supplement, which specifies that the measurements be a duration of at least 10 minutes and shall be continued past 10 minutes until the fluctuations in the displayed L_{eq} are less than 0.5 dBA.

Long-Term Noise Measurement

The long-term noise measurements were taken using two Extech Model 407780 Type 2 integrating sound level meter programmed in "slow" mode to record the sound pressure level at 3-second intervals for approximately 24 hours in "A" weighted form. In addition, the L_{eq} averaged over the entire measuring time and L_{max} were recorded. The sound level meters and microphones were mounted on tripods 5 feet above the ground and were equipped with windscreens during all measurements. The sound level meters were calibrated before and after the monitoring using an Extech calibrator, Model 407766. All noise level measurement equipment meets American National

Standards Institute specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

Noise Measurement Locations

The noise monitoring locations were selected in order to provide a baseline for any potential noise impacts that may be created by development of the proposed project, and to provide a representative sampling of the existing noise environment. The sites are described in Table 3.10-3 and Table 3.10-4, and are shown in Exhibit 3.10-1. Appendix I includes a photo index of the study area and noise level measurement locations.

Noise Measurement Timing and Climate

The noise measurements were recorded between 4:05 p.m. on September 20, 2010 and ran until 4:00 p.m. on September 21, 2010. When the long-term noise measurements were started, the sky was clear, temperature was 85 degrees Fahrenheit (°F), barometric pressure was 29.74 inches of mercury, humidity was 37 percent, and the wind averaged 4 miles per hour. Overnight, the temperature dropped to 53°F. When the short-term noise measurements were started in the morning, the sky was clear, the temperature was 54°F, the barometric pressure was 29.73 inches of mercury, the humidity was 76 percent, and there was no wind. At the completion of the long-term noise measurements, the sky was clear, the temperature was 77°F, the barometric pressure was 29.68 inches of mercury, the humidity was 41 percent, and the wind averaged 7 miles per hour.

FHWA-ROAD-77-108 Traffic Noise Prediction Model

The projected offsite roadway noise impacts from vehicular traffic were projected using a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-ROAD-77-108. Although the FHWA-ROAD-77-108 model is less sophisticated than the FHWA TNM model, the FHWA-ROAD-77-108 model still provides accurate noise prediction of roads where the speed is greater than 25 miles per hour and is a useful tool in screening offsite roads for potential noise impacts. The FHWA-ROAD-77-108 Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level. Adjustments are then made to the reference energy mean emission level to account for the roadway active width (the distance between the center of the outermost travel lanes on each side of the roadway); the total ADT and the percentage of ADT that flows during the day, evening, and night; the travel speed; the vehicle mix on the roadway, which is a percentage of the volume of automobiles, medium trucks, and heavy trucks; the roadway grade; the angle of view of the observer exposed to the roadway; and the site conditions (hard or soft) as they relate to the absorption of the ground, pavement, or landscaping.

Traffic Noise Prediction Model Inputs

The roadway parameters used for this study are presented below in Table 3.10-7. The roadway classifications are based on the City of Manteca and County of San Joaquin General Plan Circulation Elements. The roadway speed is based on the posted speed limits. Since the analyzed roadways have either landscaped areas or soft dirt adjacent to the roadways, soft-site conditions were used to develop

noise contours and analyze noise impacts to the project vicinity. Soft sites have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees.

Table 3.10-7: FHWA Model Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (miles per hour)
Yosemite Avenue	North of SR-120 Westbound Ramps	6-Lane Arterial	45
McKinley Avenue	North of Yosemite Avenue	2-Lane Street	50
McKinley Avenue	North of Atherton Drive	6-Lane Arterial	45
McKinley Avenue	North of Woodward Avenue	2-Lane Street	45
McKinley Avenue	South of Woodward Avenue	4-Lane Arterial	45
Airport Way	North of Yosemite Avenue	4-Lane Arterial	40
Airport Way	North of Daniels Street	4-Lane Arterial	40
Airport Way	North of Woodward Avenue	4-Lane Arterial	40
Airport Way	South of Woodward Avenue	2-Lane Street	55
Union Road	North of SR-120 Westbound Ramps	4-Lane Arterial	35
Union Road	North of Woodward Avenue	6-Lane Arterial	45
Union Road	South of Woodward Avenue	4-Lane Arterial	45
Main Street	North of Woodward Avenue	4-Lane Arterial	35
Manteca Road	South of Woodward Avenue	4-Lane Arterial	45
Yosemite Avenue	West of McKinley Avenue	6-Lane Arterial	45
Yosemite Avenue	East of McKinley Avenue	2-Lane Street	45
Yosemite Avenue	East of Airport Way	4-Lane Arterial	35
Daniels Street	West of Airport Way	4-Lane Arterial	30
Daniels Street	East of Airport Way	4-Lane Arterial	30
Woodward Avenue	West of McKinley Avenue	2-Lane Street	45
Woodward Avenue	East of McKinley Avenue	2-Lane Street	35
Woodward Avenue	East of Airport Way	2-Lane Street	45
Woodward Avenue	East of Union Road	2-Lane Street	45
Woodward Avenue	East of Main Street	4-Lane Arterial	45
Source: Fehr & Peers Transportation Consultants, 2010; City of Manteca, 2003; County of San Joaquin, 2009.			

In order to determine the offsite project generated traffic noise impacts, the ADT volumes on the study area roadways were obtained from the Traffic Impact Analysis. The ADT volumes were provided for the existing year, existing plus project, cumulative baseline, and cumulative plus project scenarios. The ADT volumes were calculated by multiplying the PM peak-hour intersection volumes by 12. The calculated ADT volumes are shown in Table 3.10-8.

Table 3.10-8: Offsite Roadways Average Daily Traffic Volumes

Roadway	Segment	Average Daily Traffic			
		Existing	Existing With Project	Cumulative Base	Cumulative With Project
Yosemite Avenue	North of SR-120 Westbound Ramps	5,700	8,800	16,200	16,600
McKinley Avenue	North of Yosemite Avenue	4,900	5,500	18,100	18,600
McKinley Avenue	North of Atherton Drive	0	0	28,900	44,000
McKinley Avenue	North of Woodward Avenue	1,200	6,100	28,900	25,700
McKinley Avenue	South of Woodward Avenue	0	0	17,500	30,400
Airport Way	North of Yosemite Avenue	12,500	13,400	29,600	30,400
Airport Way	North of Daniels Street	13,800	14,700	24,300	25,200
Airport Way	North of Woodward Avenue	5,800	13,900	19,100	19,100
Airport Way	South of Woodward Avenue	2,800	3,300	9,500	9,500
Union Road	North of SR-120 Westbound Ramps	16,900	17,400	31,900	32,200
Union Road	North of Woodward Avenue	5,100	7,200	16,400	16,400
Union Road	South of Woodward Avenue	3,400	3,600	7,800	7,800
Main Street	North of Woodward Avenue	8,700	9,100	24,600	24,600
Manteca Road	South of Woodward Avenue	5,600	5,800	18,200	18,200
Yosemite Avenue	West of McKinley Avenue	5,400	8,500	7,900	8,000
Yosemite Avenue	East of McKinley Avenue	8,800	10,000	16,900	17,800
Yosemite Avenue	East of Airport Way	14,500	15,400	19,100	19,800
Daniels Street	West of Airport Way	11,600	12,600	22,800	23,200
Daniels Street	East of Airport Way	3,000	3,400	15,100	15,500
Woodward Avenue	West of McKinley Avenue	1,300	19,100	6,900	0
Woodward Avenue	East of McKinley Avenue	1,400	14,300	7,700	8,600
Woodward Avenue	East of Airport Way	2,800	7,100	11,000	11,500
Woodward Avenue	East of Union Road	3,400	5,400	7,000	7,600
Woodward Avenue	East of Main Street	6,400	7,300	6,800	7,000
Source: Fehr & Peers Transportation Consultants, 2010; Michael Brandman Associates, 2010.					

Table 3.10-9 presents the hourly traffic flow distributions (vehicle mixes) used in this analysis. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks, and heavy trucks for input into the FHWA and SoundPlan Models.

Table 3.10-9: Roadway Vehicle Mixes

Roadway Classification	Vehicle Type	Hourly Traffic Flow Distributions (percent)			
		Day (7 a.m. to 7 p.m.)	Evening (7 p.m. to 10 p.m.)	Night (10 p.m. to 7 a.m.)	Overall
Collectors	Automobiles	73.6	13.6	10.2	97.4
	Medium Trucks	0.9	0.9	0.0	1.8
	Heavy Trucks	0.4	0.0	0.4	0.7
Arterials	Automobiles	69.5	12.9	9.6	92.0
	Medium Trucks	1.4	0.1	1.5	3.0
	Heavy Trucks	2.4	0.1	2.5	5.0
SR-120	Automobiles	56.5	10.5	7.8	81.6
	Medium Trucks	1.5	1.3	0.1	2.9
	Heavy Trucks	9.3	2.3	3.9	15.5
Source: Caltrans, 2009; Michael Brandman Associates, 2010.					

Source Assumptions

To assess the roadway noise generation in a uniform manner, all vehicles were analyzed at the single-lane-equivalent acoustic center of the roadway being analyzed. The width of each single-lane equivalent was based on the right-of-way and near-far lane length as determined by the General Plan Roadway Classifications. In order to determine the height above the road grade from where the noise is being emitted, each type of vehicle has been analyzed independently with autos at road grade, medium trucks at 2.3 feet above road grade, and heavy trucks at 8 feet above road grade. These elevations were determined through a noise-weighted average of the elevation of the exhaust pipe, tires, and mechanical parts in the engine, which are the primary noise emitters from a vehicle.

3.10.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, noise impacts resulting from the implementation of the proposed project would be considered significant if the project would cause:

a) 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?

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (Refer to Section 7, Effects Found Not To Be Significant)

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? (Refer to Section 7, Effects Found Not To Be Significant)

Implementation Measure N-I-3 of the City's General Plan defines what constitutes a substantial noise increase; however, this measure is dependent on the receiving land use and neighborhood response. In order to provide a consistent threshold in determining the potential impacts from transportation and combined transportation and stationary noise, Implementation Measure N-I-3 has been utilized and based on noise impacts to residential uses, which is the predominate type of sensitive receptors in the vicinity of the project site. Project-generated increases in noise levels that exceed those outlined in the thresholds below, and that affect existing noise-sensitive land uses (receptors), are considered substantial and, therefore, would constitute a significant noise impact. The proposed project will create a significant transportation noise-related impact if it would:

- Increase noise levels by 10 dB or more where the without project noise level is less than the 60-dB L_{dn} residential standard.
- Increase noise levels by 5 dB or more where the without project noise level is greater than the 60-dB L_{dn} residential standard.

Table 9-2 from the General Plan limits stationary noise levels to 50 dBA hourly L_{eq} and 70 dB L_{max} during the daytime (7 a.m. to 10 p.m.) and 45 dBA hourly L_{eq} and 65 dB L_{max} during the nighttime (10 p.m. to 7 a.m.) at any residential uses.

For construction and operation related vibration levels, Caltrans thresholds presented in its Transportation- and Construction-Induced Vibration Guidance Manual, June 2004, were utilized. The report recommends a threshold of 0.04 inch per second PPV as the significance level for continuous events.

Pursuant to Section 9.52.040 of the City of Manteca Municipal Code, construction noise is considered a nuisance, and the Municipal Code places restrictions on the time when construction noise may occur. Although the Municipal Code provides an exemption to construction noise, construction noise levels may still create adverse impacts on the nearby sensitive receptors. Since neither the General

Plan nor the Municipal Code provides quantitative construction noise thresholds, construction noise impacts have been analyzed based on the same thresholds described above for transportation noise.

3.10.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Construction Noise

Impact NOI-1:	**Construction activities associated with the proposed project may expose nearby land uses to excessive noise levels.**

Impact Analysis

This impact addresses checklist items a) and d).

Construction noise and vibration represent a short-term increase in ambient noise and vibration levels. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

In order for noise impacts created by construction of the proposed project to be considered potentially significant, the existing with construction noise level would need to either increase noise levels by 10 dB or more where the without project noise level is less than the 60-dB L_{dn} residential standard, or increase noise levels by 5 dB or more where the without project noise level is greater than the 60-dB L_{dn} residential standard.

The nearest noise sensitive land uses to the project site would be the single-family residential uses on the west side of the project site, which are as near as 90 feet from the proposed area to be graded. In addition, there are mobile homes located as near as 300 feet west of the proposed area to be graded and single-family home lots located as near as approximately 320 feet north of the proposed area to be graded.

Construction noise impacts onto the nearby sensitive receptors have been calculated according to the equipment noise levels listed above in Table 3.10-1 and through the use of the Roadway Construction Noise Model. The greatest noise impacts to the nearby residential homes would be anticipated to occur during the grading of the project site. Construction noise has been modeled based on the equipment assumption used in Section 3.3, Air Quality /Greenhouse Gases, which assumed that the simultaneous operation of one excavator; one dozer; one grader; three scrapers; one water truck; and three of either a tractor, loader, or backhoe would occur during the grading phase for the proposed project. The equipment was placed 150 feet apart starting at the edge of the area to be graded in order to create the worst-case noise levels at the nearby sensitive receptors. A summary of the results of the noise impacts associated with the construction of the proposed project is shown in Table 3.10-10, and the Roadway Construction Noise Model printouts are provided in Appendix I.

Table 3.10-10: Construction Noise Impacts at Nearby Receptors

Receptor Description	Distance from Project Site (feet)	Grading Equipment Noise Levels	
		dBA L_{eq}	dBA L_{max}[1]
Single-family residential to the west	90	76.5	79.9
Mobile homes to the west	300	67.5	69.4
Single-family residential lots to the north	320	67.1	68.9

Notes:
[1] L_{max} is based on the maximum noise from the loudest piece of equipment and the L_{eq} is the average noise from all equipment. Since there are 10 pieces of equipment being modeled, the average noise may exceed the maximum noise from one piece of equipment.
Source: Michael Brandman Associates, 2010.

Table 3.10-10 shows that the single-family residential to the west of the project site would experience the greatest construction noise impact from the proposed project, with an average construction-related noise level of 76.5 dBA L_{eq} and a maximum noise level of 79.9 dBA L_{max}. According to noise measurement Site A, the existing noise level in the vicinity of these homes is 59.9 dBA L_{dn}, which is below the 60-dB L_{dn} residential standard, a 10-dB or greater increase would be required to create a significant impact. Therefore, a significant noise impact would occur during construction of the proposed project at the single-family homes to the west of the project site.

Mitigation Measure NOI-1 is proposed that would require the contractor implement various sound control measures, including limitation of construction hours, using noise attenuation devices on heavy equipment, and the use of a minimum 10-foot-high construction noise barrier along the edge of the project site within 300 feet of any offsite residence. The 10-foot-high noise barrier combined with the various other sound control measures is anticipated to provide at least 10 dB of attenuation, which would result in a construction-related noise level of 66.5 dBA L_{eq} at the single-family residential west of the project site, which is less than the 10-dB or greater increase significance threshold.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM NOI-1 During construction activities for the proposed project, the applicant shall require its construction contractors to adhere to the following noise attenuation requirements:

- Construction activities shall be limited to the hours between 7 a.m. to 8 p.m. daily. The City of Manteca Director of Public Works shall have the discretion to permit construction activities to occur outside of allowable hours if compelling circumstances warrant such an exception (e.g., weather conditions necessary to pour concrete).

- All construction equipment shall use noise-reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. If no noise-reduction features were installed by the manufacturer, then the contractor shall require that at least a muffler be installed on the equipment.
- Construction staging and heavy equipment maintenance activities shall be performed a minimum distance of 300 feet from the nearest residence, unless safety or technical factors take precedence (e.g., an equipment breakdown).
- A 10-foot-high construction noise barrier shall be installed along the edge of the project site within 300 feet of any offsite residence prior to start of grading activities. The noise barrier shall either be constructed of a minimum 0.5-inch plywood or utilize acoustical blankets with a minimum Sound Transmission Class of 12. The barrier shall remain in place until noise intensive aspects of construction are completed.

Level of Significance After Mitigation

Less than significant impact.

Construction and Operational Vibration

Impact NOI-2:	**Construction and operational activities associated with the proposed project would not generate substantial groundborne vibration.**

Impact Analysis

This impact addresses checklist item b), which includes construction and operational vibration impacts associated the proposed project. Each issue is addressed separately.

Construction Vibration

Construction activities can produce vibration that may be felt by adjacent uses. The construction of the proposed project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The primary sources of vibration during construction would be from bulldozers and excavators. From Table 3.10-2, a large bulldozer would be the piece of equipment that would produce the largest amount of vibration: 0.089 PPV at 25 feet. Because vibration propagates in waves through the soil, multiple pieces of equipment operating simultaneously would each produce vibration waves in different phases that typically would not increase the magnitude of the vibration; instead, multiple pieces of equipment would just lengthen the duration of the vibration impact.

The closest vibration sensitive land uses are the single-family homes to the west, with the nearest structure located approximately 90 feet from the proposed area to be disturbed during construction. It is anticipated that the vibration levels caused by a large bulldozer operating on the western edge of the project site would create a vibration level at the nearest structure of around 0.02 inch per second.

This vibration level would not exceed the 0.04-inch-per-second threshold for continuous events. Therefore, construction-related vibration impacts would be less than significant.

Operational Vibration

The proposed project would consist of the development of 1,178 single-family residences, 192 townhomes/garden apartments, and 280 apartments, with residential units located as near as 40 feet from trucks operating on Woodward Avenue. From Table 3.10-2, a loaded truck would typically produce a vibration level of 0.076 inch per second PPV at 25 feet or 0.05 inch-per-second PPV at 40 feet. This vibration level would not exceed the 0.25-inch-per-second PPV transient source threshold. Therefore, vibration impacts onto the proposed residential uses would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Offsite Roadway Noise

Impact NOI-3:	**The proposed project's vehicular trips would cause a substantial permanent increase in ambient noise levels.**

Impact Analysis

This impact addresses checklist items a) and c).

The proposed project would generate additional vehicular trips on roadways in the project vicinity. Noise from motor vehicles is generated by engine vibrations, the interaction between tires and the road, and the exhaust system. The potential offsite noise impacts caused by the increase in vehicular traffic from the ongoing operations from the proposed project onto the study area roadways have been analyzed for the following four traffic scenarios:

- **Existing Condition:** This scenario refers to the existing traffic noise conditions, without construction of the proposed project.
- **Existing With Project Condition:** This scenario refers to the existing traffic noise conditions, with construction of the proposed project.
- **Cumulative Without Project Conditions:** This scenario refers to the future year traffic noise conditions based on the San Joaquin Council of Governments travel demand model conditions plus the proposed Lathrop Gateway Business Park, Machado Estates, Terra Ranch, and Oakwood Shores projects, without construction of the proposed project.

- **Cumulative With Project Conditions:** This scenario refers to the future year traffic noise conditions based on the cumulative conditions described above, with construction of the proposed project.

In order to quantify the traffic noise impacts along the analyzed roadways, the roadway noise contours were calculated. Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway. For analysis comparison purposes, the L_{dn} and CNEL noise levels are calculated at 60 feet from the centerline, which through field observations is representative of the nearest homes along the study area roadways. In addition, the distance from the centerline to the 55-, 60-, 65-, and 70-dBA noise levels are calculated for both L_{dn} and CNEL standards, and the noise calculation spreadsheets are provided in Appendix I.

Existing Conditions

The calculated existing condition noise contours are shown in Table 3.10-11.

Table 3.10-11: Existing Offsite Traffic Noise Contours

Roadway	Segment	L_{dn} at 60 feet (dBA)	Distance to Contour (feet)			
			70 dBA L_{dn}	65 dBA L_{dn}	60 dBA L_{dn}	55 dBA L_{dn}
Yosemite Avenue	North of SR-120 Westbound Ramps	62.6	RW	RW	89	191
McKinley Avenue	North of Yosemite Avenue	62.2	RW	39	84	181
McKinley Avenue	North of Atherton Drive	55.8	RW	RW	RW	68
McKinley Avenue	North of Woodward Avenue	54.8	RW	RW	RW	58
Airport Way	North of Yosemite Avenue	63.7	RW	49	106	229
Airport Way	North of Daniels Street	64.1	RW	53	113	244
Airport Way	North of Woodward Avenue	60.4	RW	RW	64	137
Airport Way	South of Woodward Avenue	60.9	RW	RW	69	149
Union Road	North of SR-120 Westbound Ramps	63.5	RW	47	102	220
Union Road	North of Woodward Avenue	62.1	RW	RW	82	178
Union Road	South of Woodward Avenue	59.5	RW	RW	55	119
Main Street	North of Woodward Avenue	60.6	RW	RW	65	141
Manteca Road	South of Woodward Avenue	61.6	RW	RW	77	166
Yosemite Avenue	West of McKinley Avenue	62.3	RW	RW	86	185
Yosemite Avenue	East of McKinley Avenue	63.4	RW	47	101	218
Yosemite Avenue	East of Airport Way	62.8	RW	RW	92	198

Table 3.10-11 (cont.): Existing Offsite Traffic Noise Contours

Roadway	Segment	L_{dn} at 60 feet (dBA)	Distance to Contour (feet)			
			70 dBA L_{dn}	65 dBA L_{dn}	60 dBA L_{dn}	55 dBA L_{dn}
Daniels Street	West of Airport Way	60.2	RW	RW	62	134
Daniels Street	East of Airport Way	54.3	RW	RW	RW	54
Woodward Avenue	West of McKinley Avenue	55.1	RW	RW	RW	61
Woodward Avenue	East of McKinley Avenue	52.3	RW	RW	RW	40
Woodward Avenue	East of Airport Way	58.4	RW	RW	47	102
Woodward Avenue	East of Union Road	59.3	RW	RW	54	116
Woodward Avenue	East of Main Street	62.2	RW	RW	84	182

Notes:
RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2010.

The calculated existing noise contours in Table 3.10-11 shows that currently the analyzed roadway segments of Yosemite Avenue, McKinley Avenue north of Yosemite Avenue, Airport Way, Union Road from north of SR-120 westbound ramps to north of Woodward Avenue, Main Street, Manteca Avenue, Daniels Street west of Airport Way, and Woodward Avenue east of Main Street exceed the City's 60-dBA L_{dn} residential standard. The noise levels from all analyzed roadway segments range from 52.3 to 64.1 dBA L_{dn}.

Existing With Project Conditions

The calculated existing with project condition noise contours are shown in Table 3.10-12.

Table 3.10-12: Existing With Project Offsite Traffic Noise Contours

Roadway	Segment	L_{dn} at 60 feet (dBA)	Distance to Contour (feet)			
			70 dBA L_{dn}	65 dBA L_{dn}	60 dBA L_{dn}	55 dBA L_{dn}
Yosemite Avenue	North of SR-120 Westbound Ramps	64.4	RW	RW	119	256
McKinley Avenue	North of Yosemite Avenue	62.7	RW	42	91	195
McKinley Avenue	North of Atherton Drive	62.8	RW	RW	93	200
McKinley Avenue	North of Woodward Avenue	61.8	RW	37	79	171
Airport Way	North of Yosemite Avenue	64.0	RW	52	111	240
Airport Way	North of Daniels Street	64.4	RW	55	118	255
Airport Way	North of Woodward Avenue	64.2	RW	53	114	246

Table 3.10-12 (cont.): Existing With Project Offsite Traffic Noise Contours

Roadway	Segment	L_{dn} at 60 feet (dBA)	Distance to Contour (feet)			
			70 dBA L_{dn}	65 dBA L_{dn}	60 dBA L_{dn}	55 dBA L_{dn}
Airport Way	South of Woodward Avenue	61.7	RW	36	77	167
Union Road	North of SR-120 Westbound Ramps	63.6	RW	48	104	224
Union Road	North of Woodward Avenue	63.6	RW	RW	104	224
Union Road	South of Woodward Avenue	59.7	RW	RW	57	124
Main Street	North of Woodward Avenue	60.8	RW	RW	67	145
Manteca Road	South of Woodward Avenue	61.8	RW	RW	79	170
Yosemite Avenue	West of McKinley Avenue	64.3	RW	RW	116	250
Yosemite Avenue	East of McKinley Avenue	64.0	RW	51	110	238
Yosemite Avenue	East of Airport Way	63.0	RW	44	96	206
Daniels Street	West of Airport Way	60.6	RW	RW	65	141
Daniels Street	East of Airport Way	54.9	RW	RW	RW	59
Woodward Avenue	West of McKinley Avenue	66.8	37	79	170	366
Woodward Avenue	East of McKinley Avenue	62.4	RW	40	87	186
Woodward Avenue	East of Airport Way	62.5	RW	41	88	189
Woodward Avenue	East of Union Road	61.3	RW	RW	73	158
Woodward Avenue	East of Main Street	62.8	RW	RW	92	198

Notes:
RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2010.

The calculated existing with project noise contour in Table 3.10-12 shows that compared with the existing conditions, the roadway segments of McKinley Avenue from north of Atherton Drive to north of Woodward Avenue and Woodward Avenue from west of McKinley Avenue to east of Union Road would also exceed the City's 60-dBA L_{dn} residential standard. The noise levels from all analyzed roadway segments range from 54.9 to 66.8 dBA L_{dn}.

Cumulative Without Project Conditions

The calculated cumulative without project condition noise contours are shown in Table 3.10-13.

Table 3.10-13: Cumulative Without Project Offsite Traffic Noise Contours

Roadway	Segment	L_{dn} at 60 feet (dBA)	Distance to Contour (feet)			
			70 dBA L_{dn}	65 dBA L_{dn}	60 dBA L_{dn}	55 dBA L_{dn}
Yosemite Avenue	North of SR-120 Westbound Ramps	67.1	RW	83	178	384
McKinley Avenue	North of Yosemite Avenue	67.9	43	93	200	432
McKinley Avenue	North of Atherton Drive	69.6	56	122	262	565
McKinley Avenue	North of Woodward Avenue	68.6	48	104	224	482
McKinley Avenue	South of Woodward Avenue	66.6	RW	77	165	355
Airport Way	North of Yosemite Avenue	67.5	RW	88	189	406
Airport Way	North of Daniels Street	66.6	RW	77	165	356
Airport Way	North of Woodward Avenue	65.6	RW	65	141	304
Airport Way	South of Woodward Avenue	66.2	RW	73	157	337
Union Road	North of SR-120 Westbound Ramps	66.2	RW	72	156	335
Union Road	North of Woodward Avenue	67.1	RW	83	180	387
Union Road	South of Woodward Avenue	63.1	RW	45	96	207
Main Street	North of Woodward Avenue	65.1	RW	61	131	282
Manteca Road	South of Woodward Avenue	66.8	RW	79	169	365
Yosemite Avenue	West of McKinley Avenue	64.0	RW	RW	110	238
Yosemite Avenue	East of McKinley Avenue	66.2	RW	73	157	337
Yosemite Avenue	East of Airport Way	64.0	RW	51	111	238
Daniels Street	West of Airport Way	63.1	RW	45	97	210
Daniels Street	East of Airport Way	61.4	RW	RW	74	159
Woodward Avenue	West of McKinley Avenue	62.4	RW	40	86	186
Woodward Avenue	East of McKinley Avenue	59.7	RW	RW	57	123
Woodward Avenue	East of Airport Way	64.4	RW	55	118	253
Woodward Avenue	East of Union Road	62.4	RW	40	87	187
Woodward Avenue	East of Main Street	62.5	RW	RW	88	189

Notes:
RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2010.

The calculated cumulative without project noise contours in Table 3.10-13 shows that all analyzed roadway segments except Woodward Avenue east of McKinley Avenue would exceed the City's 60-dBA L_{dn} residential standard. The noise levels from all analyzed roadway segments would range from 59.7 to 69.6 dBA L_{dn}.

Cumulative With Project Conditions

The calculated cumulative with project condition noise contours are shown in Table 3.10-14.

Table 3.10-14: Cumulative With Project Offsite Traffic Noise Contours

Roadway	Segment	L_{dn} at 60 feet (dBA)	Distance to Contour (feet)			
			70 dBA L_{dn}	65 dBA L_{dn}	60 dBA L_{dn}	55 dBA L_{dn}
Yosemite Avenue	North of SR-120 Westbound Ramps	67.2	RW	84	181	390
McKinley Avenue	North of Yosemite Avenue	68.0	44	95	204	440
McKinley Avenue	North of Atherton Drive	71.4	75	161	347	747
McKinley Avenue	North of Woodward Avenue	68.1	45	96	207	446
McKinley Avenue	South of Woodward Avenue	69.0	51	111	238	514
Airport Way	North of Yosemite Avenue	67.6	RW	89	192	414
Airport Way	North of Daniels Street	66.8	RW	79	169	365
Airport Way	North of Woodward Avenue	65.6	RW	65	141	304
Airport Way	South of Woodward Avenue	66.2	RW	73	157	337
Union Road	North of SR-120 Westbound Ramps	66.3	RW	73	157	337
Union Road	North of Woodward Avenue	67.1	RW	83	180	387
Union Road	South of Woodward Avenue	63.1	RW	45	96	207
Main Street	North of Woodward Avenue	65.1	RW	61	131	282
Manteca Road	South of Woodward Avenue	66.8	RW	79	169	365
Yosemite Avenue	West of McKinley Avenue	64.0	RW	RW	111	240
Yosemite Avenue	East of McKinley Avenue	66.5	RW	75	162	349
Yosemite Avenue	East of Airport Way	64.1	RW	53	113	244
Daniels Street	West of Airport Way	63.2	RW	46	98	212
Daniels Street	East of Airport Way	61.5	RW	RW	75	162
Woodward Avenue	East of McKinley Avenue	60.2	RW	RW	62	133
Woodward Avenue	East of Airport Way	64.6	RW	56	121	261
Woodward Avenue	East of Union Road	62.8	RW	43	92	198
Woodward Avenue	East of Main Street	62.6	RW	RW	90	193

Notes:
RW = Noise contour is located within right-of-way of roadway.
Source: Michael Brandman Associates, 2010.

The calculated cumulative with project noise contours in Table 3.10-14 shows that when compared with the cumulative without project condition, Woodward Avenue east of McKinley Avenue would be the only additional roadway segment to exceed the City's 60-dBA L_{dn} residential standard. The noise levels from all analyzed roadway segments would range from 60.2 to 71.4 dBA L_{dn}.

Project Impacts

In order for noise impacts created by roadway noise to be considered potentially significant, the with project noise level would need to either increase noise levels by 10 dB or more where the without project noise level is less than the 60-dB L_{dn} residential standard, or increase noise levels by 5 dB or more where the without project noise level is greater than the 60-dB L_{dn} residential standard. The proposed project's offsite traffic noise impacts have been analyzed for the existing and cumulative conditions and are discussed below.

Existing Conditions

The proposed project's potential offsite noise impacts have been calculated through a comparison between the existing without project scenario and the existing with project scenario. The results of this comparison are shown below in Table 3.10-15.

Table 3.10-15: Existing Offsite Traffic Noise Contributions

Roadway	Segment	L_{dn} at 60 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Yosemite Avenue	North of SR-120 Westbound Ramps	62.6	64.4	1.8	No
McKinley Avenue	North of Yosemite Avenue	62.2	62.7	0.5	No
McKinley Avenue	North of Atherton Drive	55.8	62.8	7.0	No
McKinley Avenue	North of Woodward Avenue	54.8	61.8	7.0	No
Airport Way	North of Yosemite Avenue	63.7	64.0	0.3	No
Airport Way	North of Daniels Street	64.1	64.4	0.3	No
Airport Way	North of Woodward Avenue	60.4	64.2	3.8	No
Airport Way	South of Woodward Avenue	60.9	61.7	0.8	No
Union Road	North of SR-120 Westbound Ramps	63.5	63.6	0.1	No
Union Road	North of Woodward Avenue	62.1	63.6	1.5	No
Union Road	South of Woodward Avenue	59.5	59.7	0.2	No
Main Street	North of Woodward Avenue	60.6	60.8	0.2	No
Manteca Road	South of Woodward Avenue	61.6	61.8	0.2	No
Yosemite Avenue	West of McKinley Avenue	62.3	64.3	2.0	No
Yosemite Avenue	East of McKinley Avenue	63.4	64.0	0.6	No
Yosemite Avenue	East of Airport Way	62.8	63.0	0.2	No
Daniels Street	West of Airport Way	60.2	60.6	0.4	No
Daniels Street	East of Airport Way	54.3	54.9	0.6	No

Table 3.10-15 (cont.): Existing Offsite Traffic Noise Contributions

Roadway	Segment	L_{dn} at 60 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Woodward Avenue	West of McKinley Avenue	55.1	66.8	11.7	Yes
Woodward Avenue	East of McKinley Avenue	52.3	62.4	10.1	Yes
Woodward Avenue	East of Airport Way	58.4	62.5	4.1	No
Woodward Avenue	East of Union Road	59.3	61.3	2.0	No
Woodward Avenue	East of Main Street	62.2	62.8	0.6	No
Source: Michael Brandman Associates, 2010.					

Table 3.10-15 above shows that for the existing conditions, noise level contributions from the proposed project to the study area roadways would range from 0.1 to 11.7 dBA. An 11.7-dBA noise increase would exceed the 10-dB increase significance threshold for areas where the without project level is less than the 60-dB L_{dn} residential standard. Since the noise impacts occur offsite on property not controlled by the applicant or the City, no feasible mitigation is available to reduce the offsite roadway noise impacts to less than significant levels. This would result in a significant and unavoidable impact.

Cumulative Conditions

The proposed project's potential offsite noise impacts have been calculated through a comparison between the cumulative without-project scenario and the cumulative with project scenario. The results of this comparison are shown below in Table 3.10-16.

Table 3.10-16: Cumulative Offsite Traffic Noise Contributions

Roadway	Segment	L_{dn} at 60 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Yosemite Avenue	North of SR-120 Westbound Ramps	67.1	67.2	0.1	No
McKinley Avenue	North of Yosemite Avenue	67.9	68.0	0.1	No
McKinley Avenue	North of Atherton Drive	69.6	71.4	1.8	No
McKinley Avenue	North of Woodward Avenue	68.6	68.1	-0.5	No
McKinley Avenue	South of Woodward Avenue	66.6	69.0	2.4	No
Airport Way	North of Yosemite Avenue	67.5	67.6	0.1	No
Airport Way	North of Daniels Street	66.6	66.8	0.2	No

Table 3.10-16 (cont.): Cumulative Offsite Traffic Noise Contributions

Roadway	Segment	L_{dn} at 60 feet			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Airport Way	North of Woodward Avenue	65.6	65.6	0.0	No
Airport Way	South of Woodward Avenue	66.2	66.2	0.0	No
Union Road	North of SR-120 Westbound Ramps	66.2	66.3	0.1	No
Union Road	North of Woodward Avenue	67.1	67.1	0.0	No
Union Road	South of Woodward Avenue	63.1	63.1	0.0	No
Main Street	North of Woodward Avenue	65.1	65.1	0.0	No
Manteca Road	South of Woodward Avenue	66.8	66.8	0.0	No
Yosemite Avenue	West of McKinley Avenue	64.0	64.0	0.0	No
Yosemite Avenue	East of McKinley Avenue	66.2	66.5	0.3	No
Yosemite Avenue	East of Airport Way	64.0	64.1	0.1	No
Daniels Street	West of Airport Way	63.1	63.2	0.1	No
Daniels Street	East of Airport Way	61.4	61.5	0.1	No
Woodward Avenue	East of McKinley Avenue	59.7	60.2	0.5	No
Woodward Avenue	East of Airport Way	64.4	64.6	0.2	No
Woodward Avenue	East of Union Road	62.4	62.8	0.4	No
Woodward Avenue	East of Main Street	62.5	62.6	0.1	No
Source: Michael Brandman Associates, 2010.					

Table 3.10-16 shows that for the cumulative conditions, noise level contributions from the proposed project to the study area roadways would range from -0.5 to 2.4 dBA. A 2.4-dBA noise increase would be below the 5-dB increase significance threshold for areas where the without project level already exceeds the 60-dB L_{dn} residential standard. Therefore, for the cumulative conditions, a less than significant offsite noise impact from project-related vehicle traffic noise would occur along the study area roadways.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

No feasible mitigation is available.

Level of Significance After Mitigation

Significant unavoidable impact.

Onsite Roadway Noise

Impact NOI-4:	**The proposed project may expose sensitive receptors to mobile noise levels that cause significant impacts.**

Impact Analysis

This impact addresses checklist item a).

The proposed residential units would be exposed to mobile noise from Woodward Avenue and the proposed internal roadways. The traffic on the proposed internal roadways would consist of low traffic volumes at slower speeds that would not make a significant contribution to the noise environment. Because of this, the proposed internal roadways have not been analyzed. An impact would occur if the mobile noise level would exceed 60 dB L_{dn} for the outdoor activity areas or 45 dB L_{dn} for the interior areas of the proposed residential uses.

Although the tentative map (Exhibit 2-4) does not provide specific footprints for the proposed residential units, it does show that both single-family and multi-family residential units are proposed to be located immediately adjacent to Woodward Avenue. Based on the existing residential developments along Woodward Avenue east of the project site, these proposed homes could be as near as 60 feet from the centerline of Woodward Avenue. The exterior and interior noise impacts to the proposed homes along Woodward Avenue have been calculated through the use of a version of the FHWA-ROAD-77-108 traffic noise prediction model. The potential impacts were calculated based on the worst-case cumulative with project conditions, which found that Woodward Avenue would have 24,700 vehicles per day.

The FHWA-ROAD-77-108 traffic noise prediction model printouts are provided in Appendix I and the model found that the noise levels would be as high as 68.2 dB L_{dn} at the outdoor activity areas and as high as 68.3 dB L_{dn} at the façade of the nearest homes to Woodward Avenue. New residential construction typically provides at least 25 dB exterior to interior attenuation. Based on this attenuation rate the interior noise level would be 43.3 dB L_{dn}, which is within the City's 45 dB L_{dn} interior noise standard. The nearest homes to Woodward Avenue would exceed the City's 60 dB L_{dn} standard for outdoor activity areas and would be considered a significant impact.

Mitigation Measure NOI-4 is proposed that would require the applicant to construct a minimum 7-foot high sound wall between Woodward Avenue and any proposed single-family residential units outdoor activity areas that are immediately adjacent to Woodward Avenue. Through implementation of the sound wall, the noise level at the outdoor activity areas of the nearest single-family residential units to Woodward Avenue would be reduced to 58.2 dB L_{dn}. For the multi-family residential units three options are provided:

- Construct a minimum 4-foot-high berm adjacent to Woodward Avenue, which would reduce the noise level at any outdoor activity areas to 58.7 dB L_{dn}.

- Locate the dwelling units a minimum of 140 feet away from the centerline of Woodward Avenue, which would reduce the noise level at any outdoor activity areas to 58.8 dB $L_{dn.}$
- Orient any private outdoor living spaces away from Woodward Avenue. It is not possible to calculate noise reductions because detailed building plans are unavailable; however, it can be safely assumed that noise levels in any outdoor activity areas would be less than 60 dB L_{dn}, because these areas would not have a direct line of sight to Woodward Avenue.

With implementation of Mitigation Measure NOI-4, impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM NOI-4 Prior to issuance of building permits for any residential units that adjoin Woodward Avenue, the project applicant shall prepare and submit plans to the City of Manteca that identify the following noise attenuation features:

- Single Family Dwelling Units: A minimum 7-foot high masonry wall shall be provided between Woodward Avenue and any proposed single-family residential units. The wall shall be of high quality design.
- Multi-Family Dwelling Units: One or more of the following measures shall be implemented:
  - A 4-foot high landscaped berm along Woodward Avenue
  - Locate the dwelling units a minimum of 140 feet away from the Woodward Avenue centerline
  - Orient any private outdoor living spaces (e.g., patios, balconies, decks, etc.) away from Woodward Avenue.

Level of Significance After Mitigation

Less than significant impact.

Stationary Noise

Impact NOI-5:	**The proposed project would not generate stationary noise levels that cause significant impacts at nearby receptors.**

Impact Analysis

This impact addresses checklist items a) and c).

The proposed project would have potential stationary noise impacts on the proposed residential units from noise source associated with the proposed clubhouse that may include pool and spa pumps, HVAC equipment, and outdoor activities. An impact would occur if the stationary noise sources

would exceed 50 dB L_{eq} or 70 dB L_{max} between 7 a.m. and 10 p.m. or 45 dB L_{eq} or 65 dB L_{max} between 10 p.m. and 7 a.m.

The proposed site plan provides a roadway buffer between the proposed clubhouse and proposed residential units. This roadway buffer is of adequate of size to reduce the noise created from mechanical equipment to be within the City standards; however, noise associated with outdoor activities may exceed the nighttime stationary noise standard of 45 dB L_{eq} or 65 dB L_{max}. This would be considered a significant impact.

Mitigation Measure NOI-5 is proposed that would limit outdoor activities at the clubhouse between the hours of 7 a.m. and 10 p.m. With the implementation of Mitigation Measure NOI-5, the stationary noise impact would be reduced to less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM NOI-5 During project operations, the project applicant shall limit outdoor activities at the clubhouse to the hours of 7 a.m. to 10 p.m. Indoor activities are permitted between 10 p.m. and 7 a.m.. Signage shall be posted at the clubhouse advising users of this restriction.

Level of Significance After Mitigation

Less than significant impact.

3.11 - Population and Housing

3.11.1 - Introduction

This section describes the existing population and housing and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on population and housing information provided by the California Department of Finance and the City of Manteca.

3.11.2 - Environmental Setting

Current Population and Housing Estimates

The California Department of Finance (DOF) estimated the population of the City of Manteca to be 68,847 as of January 1, 2010. Population and housing characteristics for Manteca are summarized in Table 3.11-1.

Table 3.11-1: Manteca Population and Housing Characteristics (2010)

Population	Dwelling Units	Persons per Household
68,847	23,250	2.961
Source: California Department of Finance, 2010.		

Historic Growth

Population

The population of Manteca has grown significantly since 1970. The City's population increased almost five times in the 40 years between 1970 and 2010, growing at a compound annual growth rate of 4.09 percent. The City's historic population growth between 1970 and 2010 is summarized in Table 3.11-2.

Table 3.11-2: Manteca Historic Population Growth

Year	Population	Change from Previous (Percent)
1970	13,845	—
1975	17,050	23.10
1980	24,925	46.20
1985	31,700	27.20
1990	40,600	28.10
1995	43,848	8.00
2000	49,255	12.30
2005	61,817	25.50

Table 3.11-2 (cont.): Manteca Historic Population Growth

Year	Population	Change from Previous (Percent)
2010	68,847	11.40
Net Change	**55,002**	**397.30**
Compound Annual Growth Rate		**4.09**
Source: California Department of Finance, 2010.		

Housing

The historical housing growth is calculated from 1990 to 2010. The City's housing units almost doubled in the 20 years between 1990 and 2010, growing at a compound annual growth rate of 2.58 percent. The City's housing growth between 1990 and 2010 is summarized in Table 3.11-3.

Table 3.11-3: Manteca Historic Housing Growth

Year	Dwelling Units	Change from Previous (Percent)
1990	13,981	—
1995	15,202	8.70
2000	16,936	11.40
2005	20,697	22.20
2010	23,250	12.30
Net Change	**9,269**	**66.30**
Compound Annual Growth Rate		**2.58**
Source: California Department of Finance, 2010.		

Projected Growth

Population

Population growth is projected to continue for the near future, primarily driven by continued demand for relatively affordable housing and quality of life in Manteca. Table 3.11-4 indicates the San Joaquin Council of Governments (SJCOG) projection that Manteca will grow to 86,370 by 2025, approximately the horizon of the General Plan.

Table 3.11-4: Manteca Population Projections

Year	City of Manteca
2000	49,500
2005	56,874
2010	64,248
2015	71,622

Table 3.11-4 (cont.): Manteca Population Projections

Year	City of Manteca
2020	77,699
2025	86,370
Source: City of Manteca, 2004.	

Table 3.11-5 provides a calculation of the annual population growth that would occur at the maximum rate allowed under the Growth Management Ordinance. Under this growth rate, the population of Manteca could exceed 132,000 persons by 2025, approximately double the current population. However, such a sustained rate of growth would be unusual for any California city and is substantially higher than the state average rate.

Table 3.11-5: Maximum Population Growth Under Growth Management Ordinance

Year	City of Manteca
2005	61,749
2010	74,766
2015	90,528
2020	109,613
2022	118,329
2025	132,721
Source: City of Manteca, 2004.	

A total of 94,378 people would be accommodated in the Primary Urban Service boundary under the assumptions established by the General Plan Steering Committee. This would equate to a population growth rate of approximately 2.7 percent annually, and is comparable to the SJCOG projection.

The assumptions include a Market Reserve of 20 percent. The Market Reserve is land that would be available to accommodate population growth, but is not projected to be required. It is intended to provide flexibility and choice in the residential land market in order to maintain reasonable land prices that contribute to affordable housing. Development of the Market Reserve would accommodate a population of approximately 113,254 residents in 20 years. This would be slightly less than would occur if the population grew consistently at the maximum rate allowed under the Growth Management Ordinance. Moreover, the residential designations provide a range of housing types and densities that can accommodate additional population without increasing the land area allocated to urban use.

Regional Housing Need Allocation Plan

SJCOG prepares the Regional Housing Needs Assessment (RHNA) to allocate regional housing growth among the San Joaquin County communities. The RHNA indicates that Manteca is expected to accommodate 3,823 new housing units within the four California Department of Housing and Community Development (HCD) income levels between 2004 and 2008. This is significantly higher than the housing demand based on simple population projection. The RHNA calculates the formula for housing needs on the basis of several factors, not just population growth.

Table 3.11-6 summarizes the Regional Housing Needs Allocation by income category. It indicates that approximately 60 percent of the housing need will be moderate- to upper-income households.

Table 3.11-6: Regional Housing Needs Allocation

Income Category	Dwelling Units	Dwelling Unit Allocation (Percent)
Very Low	785	20.5
Low	651	17.0
Moderate	745	19.5
Upper/Market rate	1,643	43.0
Total	**3,823**	**100.0**
Source: City of Manteca, 2004		

3.11.3 - Regulatory Framework

State

California Housing Element Law

State law requires each city and county to adopt a general plan for future growth. This plan must include a housing element that identifies housing needs for all economic segments and provides opportunities for housing development to meet that need. At the state level, HCD estimates the relative share of California's projected population growth that would occur in each county in the State, based on DOF population projections and historic growth trends. Where there is a regional council of governments, such as SJCOG, HCD provides the regional housing need to the council. The council then assigns a share of the regional housing need to each of its cities and counties. The process of assigning shares provides cities and counties the opportunity to comment on the proposed allocations. HCD oversees the process to ensure that the council of governments distributes its share of the State's projected housing need.

Each city and county must update its general plan housing element on a regular basis (approximately every 5 years). Among other things, the housing element must incorporate policies and identify potential sites that would accommodate a city's share of the regional housing need. Before adopting an update to its housing element, a city or county must submit the draft to HCD for review. HCD will

advise the local jurisdiction whether its housing element complies with the provisions of California Housing Element Law.

The councils of governments are required to assign regional housing shares to the cities and counties within their region on a similar 5-year schedule. At the beginning of each cycle, HCD provides population projections to the councils of governments, who then allocate shares to their cities and counties. The shares of the regional need are allocated before the end of the cycle so that the cities and counties can amend their housing elements by the deadline.

Local

City of Manteca

General Plan

The General Plan establishes the following goals and policies related to population and housing:

- **Policy LU-P-2:** Growth must contribute to a strong diversified economic base and an effective balance between employment and housing opportunities for all income levels.
- **Policy ED-P-9:** Promote the development of affordable and market rate housing that matches with the needs of the present and future Manteca work force.
- **Goal ED-10:** Provide a variety of housing types to house all segments of the Manteca community in accordance with the Housing Element.
- **Policy ED-P-17:** Plan for a broad range of housing types and densities to accommodate all income levels and job classifications.
- **Policy ED-P-18:** Plan for a balanced community where the Manteca workforce will be able to afford housing within the city of Manteca.
- **Policy PF-P-9:** City water services shall not be extended to unincorporated areas except in extraordinary circumstances. Existing commitments for City water service outside the City limits shall continue to be honored.
- **Policy PF-P-21:** City sewer services will not be extended to unincorporated areas, except in extraordinary circumstances. Existing commitments for sewer service outside the city limits shall continue to be honored.
- **Goal H-1:** Encouraging New Development.
  The City seeks to encourage the development of housing units affordable to all segments of the population through financial and regulatory incentives and aggressive land use planning.
  To provide a range of housing types, densities, designs, and meet existing and projected housing needs for all economies of the community.
- **Policy H-P-3:** The City shall establish adequate residential zoning to accommodate the housing needs established in the Regional Housing Needs Assessment (RHNA).
- **Policy H-P-7:** The City shall establish residential zoning to achieve a mix of single family and multi-family development that will provide adequate housing opportunities for households of all income levels.

- **Policy H-P-12:** The City shall strive to ensure that affordable units are distributed in suitable locations throughout the city that are proximate to retail services, parks, schools, public facilities and public transit.
- **Policy H-P-13:** Below market rate affordable residential units in development areas shall be similar to the market rate units in exterior style and materials.
- **Goal H-2:** Removing Barriers to Affordable Housing Development
  The City will seek to remove, where legally possible, governmental constraints that constrain the maintenance, improvement, and development of housing.
  To promote the development of affordable housing in the City of Manteca.
- **Policy H-P-23:** The City shall promote the expeditious processing and approval of residential projects that meet General Plan policies and City regulatory requirements.
- **Goal H-3:** Maintaining and Preserving Existing Housing.
  To ensure the provision of adequate services to support existing and future residential development.
- **Goal H-6:** Reducing Ongoing Housing Expenditures
  The following goals, policies, and implementation programs are provided in an attempt to reduce total housing costs by reducing ongoing operation and maintenance costs of housing.
  To encourage energy efficient residential and neighborhood designs that make reduce total housing costs by reducing ongoing operation and maintenance costs.

3.11.4 - Methodology

Impacts on population, housing, and employment were assessed by reviewing existing and anticipated population, housing, and employment projections provided DOF and the City of Manteca General Plan. The proposed project's impacts were evaluated by determining their consistency with these estimates and projections.

3.11.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, population and housing impacts resulting from the implementation of the proposed project would be considered significant if the project would:

Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

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

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

3.11.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Growth Inducement

Impact POP-1:	**The proposed project would not directly or indirectly induce substantial population growth.**

Impact Analysis

This impact assesses the proposed project's potential to induce substantial population growth.

There are two types of population growth: direct and indirect. Direct population growth occurs from the development of new residential units. Indirect population growth occurs from the creation of new employment opportunities or the removal of a barrier to growth (e.g., the extension of urban infrastructure to an undeveloped area). The proposed project would construct 1,650 residential units. The proposed project would also result in the extension of public services infrastructure to an area that does not receive any service currently. In addition, project roadways may be used for future development. All of these aspects of the proposed project have the potential to cause population growth either directly or indirectly. Direct or indirect population growth is only considered substantial if it exceeds projections contained in local or regional population forecasts. In this case, the applicable planning and population forecast is growth anticipated by the City's Housing Element. Direct population growth and indirect population growth is discussed separately below.

Direct Population Growth

The proposed project would cause direct population growth by constructing 1,650 residential units. Table 3.11-7 summarizes the population growth attributable to the proposed project. As shown in the table, the proposed project is expected to increase the City's population by 4,886 persons.

Table 3.11-7: Project-Related Population Growth

Dwelling Units	Average Household Size	Population Growth
1,650	2.961	4,886
Source: Michael Brandman Associates, 2010.		

Table 3.11-8 compares the proposed project's population growth with those provided by SJCOG and the Growth Management Ordinance between 2010 and 2020. Although this Draft EIR assumes that the proposed project will be completed by 2013, as a practical matter, the project would likely be phased over a number of years and not fully occupied within 12 months. Therefore, to provide an accurate representation of population growth, a 10-year period has been used.

Table 3.11-8: Growth Projections (2010 to 2020)

Year	SJCOG Projections	Growth Management Ordinance
2010	64,248	74,766
2015	71,622	90,528
2020	77,699	109,613
Net Increase	**13,451**	**34,847**
Proposed Project Population Growth	4,886	
Percent of Growth Projections	36.3	14.0

Notes:
SJCOG population growth projections shown in Table 3.11-4.
Growth Management Ordinance growth projections shown in Table 3.11-5.
Source: Michael Brandman Associates, 2010.

As shown in the table, the population growth attributable to the proposed project would represent between 14.0 and 36.3 percent of the forecasted growth between 2010 and 2020 by these two sources. Because the proposed project's population growth figures are within the growth projections provided by these two sources, it can be concluded that the proposed project would be considered planned growth and, therefore, not "growth inducing."

Removal of Barrier to Growth

The proposed project would result in the extension of urban infrastructure to an area that is currently not serviced. In particular, potable water and sewer service would be extended to the project site. However, this would not be considered removal of a barrier to growth, because the project site is within the city limits and is contemplated for urban development by both the General Plan and Zoning Ordinance. As such, the extension of this urban infrastructure is "growth accommodating" because it is intended to facilitate planned growth.

Furthermore, the extension of urban infrastructure to the project site would not result in unplanned growth urban occurring in nearby unincorporated areas. The City of Manteca General Plan contains two policies (PF-P-9 and PF-P-21) that specifically state that potable water and sewer service shall not be extended to unincorporated areas except in extraordinary circumstances. As such, there is a high degree of certainty that the extension of potable water and sewer service to the project site would not lead to the extension of these urban services to surrounding unincorporated areas. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Displacement of Housing and Population

Impact POP-2:	**The proposed project would not displace substantial numbers of houses and people and would not necessitate the construction of replacement housing elsewhere.**

Impact Analysis

This impact assesses the proposed project's potential impact to displace existing housing or population.

The project site contains several agricultural-related structures and a mobile home. The mobile home is the only residential structure and the remaining buildings are non-residential in nature. The mobile home was occupied at the time of the site visit in August 2010.

The removal of the mobile home would not constitute the displacement of substantial numbers of persons because approximately four persons would be affected. Given existing residential vacancy rates in Manteca, it would be expected that the mobile home occupants could readily find replacement housing elsewhere; therefore, no construction of new dwelling units would be necessary. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

3.12 - Public Services and Utilities

3.12.1 - Introduction

This section describes the existing public services and utilities and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information provided by the Manteca Fire Department, the Manteca Police Department, the Manteca Public Works Department, South San Joaquin Irrigation District, Cal Recycle, and Pacific Gas and Electric Company. Written responses from service providers are provided in Appendix I. In addition, the potable water analysis is based on a Water Supply Assessment prepared by the City of Manteca, which is provided in Appendix J.

3.12.2 - Environmental Setting

Fire Protection and Emergency Medical Services

The Manteca Fire Department provides fire protection and emergency medical services to the City of Manteca. The Fire Department is headquartered at 1154 S. Union Road.

Stations

The Fire Department staffs three stations, summarized in Table 3.12-1.

Table 3.12-1: Fire Station Summary

No.	Location	Apparatus	Distance to Lathrop Road/Airport Way
1	290 S. Powers Avenue	Engine 241 and Rescue 24	5.8 miles
2	1154 S. Union Road (Headquarters)	Engine 242 and Truck 24	3.2 miles
3	399 W. Louise Avenue	Engine 243	5.7 miles
Source: Manteca Fire Department, 2010.			

Organization

The Fire Department is organized into three divisions: Administration, Operations, and the Fire Prevention Bureau.

Administration Division

The Administration Division provides for and manages several important functions of the Department including Personnel, Communications/Dispatch, Policies and Procedures, Recruitment, and Emergency Planning.

Operations Division

The Operations Division is responsible for responding to emergencies including fires, hazardous materials releases and treating the sick and injured. Through an agreement with the City of Stockton Fire Dispatch Center, the Manteca Fire Department receives 911 requests for service from Stockton Fire.

Comprehensive mutual and automatic aid agreements with the Lathrop-Manteca Fire District and other surrounding fire agencies, as well as the State of California, allows the Manteca Fire Department to receive and provide emergency response resources to surrounding jurisdictions and throughout the State.

All Operations Division Personnel, including the Shift Commanders, work a 56-hour work week and 48-hour shifts. The Shift Commander is assigned to supervise each of the three shifts and responds to emergencies while on duty 24 hours a day. Three engine companies, a truck company, and one rescue unit respond from three stations strategically located throughout the City of Manteca.

Prevention Bureau

The Fire Prevention Bureau administers and enforces local, state, and national fire and life safety codes. The bureau's responsibilities encompass a wide range or activities and programs including fire inspections, re-inspections, land development project reviews, fire code developments, fire sprinkler and alarm system plan reviews, new business license inspections, fire code permit inspections, vegetation management and weed abatement programs, public education, hazardous materials inspections, and providing awareness and identification for businesses.

Staffing

The Fire Department is made up of career and reserve fire personnel. The Fire Department is staffed by 42 career personnel and 20 reserve personnel. Each engine and truck company is staffed with a minimum of three firefighters, which helps provide for an effective workforce of 15 firefighters responding for all structure fires.

Apparatus

The Fire Department operates the following fire and emergency medical response apparatus:

- Three engines
- One ladder truck
- Three reserve engines
- One medium rescue unit
- One USAR rescue trailer

Calls for Service

The Fire Department responded to 4,823 calls for service in 2009. Table 3.12-2 summarizes the calls for service.

Table 3.12-2: Calls For Service Summary (2009)

Category	Calls	Percent of Total
Emergency medical services	3,065	64
Other emergencies	857	18
Service	589	12
Fires	274	6
Total	**4,785**	**100**

Notes:
Other emergencies include vehicle accidents, hazmat releases, and electrical emergencies.
Service calls include smoke/odor investigations, public/police assists, and false alarms.
Source: Manteca Fire Department, 2010.

Response Times

Table 3.12-3 summarizes response times by station for 2009. The Fire Department's response time objective is being on scene within 5 minutes of dispatch.

Table 3.12-3: Response Times By Fire Station (2009)

No.	Location	Average Response Time (Minutes)
1	290 S. Powers Avenue	3.5
2	1154 S. Union Road (Headquarters)	4.2
3	399 W. Louise Avenue	4.5

Source: Manteca Fire Department, 2010.

ISO Rating

The Insurance Services Office (ISO) Public Protection Classification Program currently rates the Fire Department as three on a scale of 1 to 10, with 1 being the highest possible protection rating and 10 being the lowest. The ISO rating measures individual fire protection agencies against a Fire Suppression Rating Schedule, which includes such criteria as facilities and support for handling and dispatching fire alarms, first-alarm response and initial attack, and adequacy of local water supply for fire-suppression purposes. The ISO ratings are used to establish fire insurance premiums.

Manteca District Ambulance Service

The Manteca District Ambulance Service also provides emergency medical services to the City of Manteca.

The Manteca District Ambulance Service covers a 100-square-mile area and has two stations: one in Manteca and the other in Lathrop. The ambulance service has 36 employees and has eight ambulances. Two 24-hour ambulances and one 12-hour ambulance respond out of the Manteca station 7 days per week. One 24-hour ambulance responds out of the Lathrop station 7 days per week. The ambulance service has mutual aid agreements with the cities of Ripon, Tracy, and

Escalon. The Manteca District Ambulance Service has 20 paramedics and 16 emergency medical technicians.

Police Protection

The Manteca Police Department provides police protection to the City of Manteca. The Police Department is headquartered at 1001 W. Center Street.

Organization and Staffing

The Police Department is organized into two divisions: Operations and Services.

Operations Division

The Operations Division is the larger of the two divisions and includes all of the Police Department's uniformed police officers. The division is responsible for providing direct police response to requests for assistance. The patrol, traffic, and community service officers respond to and investigate criminal acts and public safety concerns. Operations includes teams that have been specially trained and equipped to meet some of the community and the Police Department's special needs, including canine, mounted patrol, bomb disposal, Special Weapons and Tactics (SWAT), and crisis negotiations. Fifty-two employees are assigned to the Operations Division.

Services Division

The Services Division is made up of several units, including Investigations, Detectives, School Resource Officer, Gang Unit, Records, Evidence and Property, Dispatch, and Animal Services. The Services Division consists of approximately 95 full-time, part-time, and volunteer employees managed by five Supervisors, and the Division Commander who oversees the management and operations of the units.

Calls for Service

The Police Department responded to 35,334 calls for service in 2009.

Response Times

The Police Department's response time standards are 3 minutes or less for Priority 1 (emergency) calls and 30 minutes or less for Priority 2 (non-emergency) calls. In 2009, the Police Department responded to 97.8 percent of Priority 1 calls within 3 minutes or less and 98.7 percent of the Priority 2 calls within 30 minutes or less.

Schools

The project site is within the boundaries of the Manteca Unified School District (MUSD). The MUSD's boundaries encompass 113 square miles and include the cities of Manteca and Lathrop and the unincorporated communities of French Camp and Weston. MUSD's 28 schools consist of 20 elementary schools, five high schools, two continuation schools, and one community day school.

Enrollment

As of September 2010, MUSD enrolled 23,349 students.

Local Schools

The project site is within the enrollment areas of Nile Garden and Veritas Elementary Schools and Sierra High School. Table 3.12-4 summarizes the characteristics of the three schools based on information from the 2008–2009 academic year.

Table 3.12-4: School Characteristics (2008-09)

Name	Grades	Enrollment	Full-Time-Equivalent Teachers	Pupil-Teacher Ratio	Student-Computer Ratio
Nile Garden Elementary	K-8	525	25.5	20.6	3.8
Veritas Elementary	K-8	408	18.0	22.7	6.6
Sierra High	9-12	1,564	74.7	20.9	3.3
Source: Education Data Partnership, 2010.					

Parks and Recreation

The Manteca Parks and Recreation Department currently oversees 300 acres of neighborhood and community parks throughout the City with the addition of the Tidewater Bikeway, a skate park, and a senior center. The department also supervises the operation of an 18-hole municipal golf course as well as library services. The City's General Plan identifies a service standard of 5 acres of parkland per 1,000 residents. The closest existing park facility to the proposed project area is Dutra Estates Park located within 2,000 feet to the northeast.

Libraries

The Stockton-San Joaquin County Public Library System provides Manteca with library services. The County library system operates the Manteca Library, located at 320 W. Center Street. The library operates 6 days a week (Monday through Saturday).

Potable Water

The City of Manteca Public Works Department, Water Division distributes potable water within the city limits. The City obtains treated potable water from the South San Joaquin Irrigation District (SSJID).

The description of potable water supply infrastructure and sources is derived from the Water Supply Assessment prepared by the City of Manteca Public Works Department, Engineering Division. The complete Water Supply Assessment is provided in Appendix J. Below are summaries of the relevant findings.

Water Supply Planning

The City of Manteca 2005 Water Master Plan and the 2005 Urban Water Management Plan document the City's water supply planning. The City limits the number of new residential sewer connections to 3.9 percent per year. The limitation in new sewer connections will also limit the growth in water demand. A lower growth rate for water demand of 3.4 percent is used in both the 2005 Water Master Plan and the 2005 Urban Water Management Plan to project future water demand. Both the 2005 Water Master Plan and 2005 Urban Water Management Plan include local groundwater and the South County Surface Water Supply Project as sources of water for the City of Manteca.

The 2005 Urban Water Management Plan was adopted in December of 2005. The 2005 Urban Water Management Plan includes water supply and demand comparisons through 2030 assuming the 3.4 percent growth in water demand. During the planning period, water is supplied by groundwater from City wells and surface water from the South County Water Supply Project. The 2005 Urban Water Management Plan also contains the single and multiple dry year water demand-supply comparisons and the water supply shortage contingency planning. The water supply and demand comparisons from the 2005 Urban Water Management Plan are included in Appendix J. The water supply-demand comparison in Table 9 of the Urban Water Management Plan shows that the water demand will exceed projected supply by 1,145 acre-feet in the year 2030 or 3.3 percent without conservation. The increase in future water supply is provided by the planned increase in surface water deliveries and drilling of new wells to meet water demands. Conservation and the implementation of reclaimed water use during the planning period will reduce potable water demand such that the water supply will exceed demand by 2030. A 20-percent, state-mandated water reduction by conservation would reduce demand by 6,328 acre-feet in 2030. Reclaimed water use above the currently planned 2,300 acre-feet in 2030 can provide an additional reduction in potable water demand in Manteca.

Table 3.12-5, Table 3.12-6, and Table 3.12-7 summarize various supply and demand projections through the Year 2035 contained in the 2005 Urban Water Master Plan. This planning horizon satisfies the 20-year planning period required in water supply assessments. A 20-percent potable demand reduction and increased reclaimed water use are factored into the water supply and demand projection in the tables. The water supply and demand comparison shown in Table 3.12-7 indicates there will be sufficient water through 2035 with the currently planned water supply.

Table 3.12-5: Current and Projected Water Supplies

Water Supply Sources	Acre Feet						
	2005	2010	2015	2020	2025	2030	2035
SSJID South County Surface Water Project	4,100	9,704	11,470	13,557	16,444	18,500	18,500
Groundwater Production	11,491	8,606	10,171	12,022	13,790	13,790	13,790
Recycled Water	—	161	645	1,700	2,100	2,300	2,500

Table 3.12-5 (cont.): Current and Projected Water Supplies

Water Supply Sources	Acre Feet						
	2005	2010	2015	2020	2025	2030	2035
Total	**15,591**	**18,471**	**22,286**	**27,279**	**32,334**	**34,590**	**34,790**

Notes:
The information contained in this table reflects revisions to Table 4 from the City of Manteca 2005 Urban Water Management Plan.
Source: City of Manteca, 2010.

Table 3.12-6: Past, Current, and Projected Water Use

Water Use Sectors	Acre Feet									
	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
Single-family residential	6,235	5,789	8,035	10,467	12,372	12,721	13,826	16,342	19,316	22,830
Multi-family residential	1,267	1,068	1,260	1,314	1,553	1,597	1,736	2,052	2,425	2,866
Commercial	828	815	1,103	1,211	1,431	1,472	1,600	1,891	2,235	2,642
Industrial	173	213	145	107	126	130	142	167	198	234
Institutional and governmental	220	251	363	329	390	400	434	574	759	897
Landscape	548	598	658	617	729	750	815	963	1,136	1,345
Unaccounted for system losses	602	1,988	1,044	1,446	1,709	2,020	2,388	2,822	3,336	3,944
Total	**9,873**	**10,631**	**12,608**	**15,491**	**18,310**	**19,090**	**20,941**	**24,752**	**29,407**	**34,759**

Notes:
Year 2015 demand figures assume 13-percent reduction achieved through conservation.
Year 2020 through 2035 figures assume 20-percent reduction achieved through conservation.
The information contained in this table reflects revisions to Table 4 from the City of Manteca 2005 Urban Water Management Plan.
Source: City of Manteca, 2010.

Table 3.12-7: Projected Supply and Demand Comparison

Category	Acre-Feet						
	2005	2010	2015	2020	2025	2030	2035
Supply	15,591	18,471	22,286	27,279	32,334	34,590	34,790
Demand	15,491	18,310	19,090	20,941	24,752	29,407	34,759
Difference	**100**	**161**	**3,196**	**6,338**	**7,582**	**5,183**	**31**

Notes:
The information contained in this table reflects revisions to Table 9 from the City of Manteca 2005 Urban Water Management Plan.
Source: City of Manteca, 2010.

The water supply planning in the 2005 Urban Water Management Plan and Water Master Plan consider increased water demand for future developments such as the proposed project.

Water Sources

Groundwater Supply

The City of Manteca draws groundwater from the Eastern San Joaquin County Groundwater Basin, which is a subbasin of the San Joaquin Valley Groundwater Basin. The California Department of Water Resources (DWR) identified the basin as being in a state of overdraft in DWR Bulletin 160-98. The basin is described in the 2005 Urban Water Management Plan and is included in Appendix J.

The agricultural, municipal, and industrial groundwater extraction in Eastern San Joaquin Groundwater Basin is estimated at 867,600 acre-feet per year in the Eastern San Joaquin Groundwater Basin Groundwater Management Plan. The estimate is based on land use and reported groundwater pumping. Land use information is used to estimate groundwater extraction where groundwater pumping is not reported. The estimated basin overdraft is 150,700 acre-feet per year.

Modeling conducted for the Eastern San Joaquin Groundwater Basins Groundwater Management Plan showed a continued decline in groundwater levels and loss of aquifer storage at the estimated basin overdraft. The Integrated Regional Management Plan for the groundwater basin that was developed and adopted in 2007 presented a water management strategy and course of action to implement an integrated conjunctive use program to manage and restore the groundwater resource in the basin.

The City of Manteca will limit groundwater extraction to the safe aquifer yield of 1 acre-foot per acre per year by the use of surface water from the South County Water Supply Project. The 2005 Urban Water Management Plan projected a maximum groundwater extraction of 13,790 acre-feet per year to be reached by 2027, based on projected city growth and the City's Primary Urban Service Area (PUSA) of 13,790 acres as defined in the City's General Plan. City growth beyond the PUSA will allow greater groundwater extraction. The 2005 Water Master Plan includes the construction of 11 new wells in its capital improvement plan in order to increase groundwater extraction capability for future water demands.

Agricultural and some industrial water users located in the Manteca planning area also use locally produced groundwater. Agricultural water use is expected to decline, since Manteca's residential development is displacing the local agriculture. The net impact on agricultural water supply is neutral, as agricultural and residential water use on an annual basis is similar. Industrial users should benefit from Manteca's conjunctive water use as the City's groundwater extraction is reduced to the safe aquifer yield.

Surface Water

The City of Manteca, along with the cities of Escalon, Lathrop, and Tracy, contracted with the SSJID in 1995 for treated surface water. The contract entitles the City to 11,500 acre-feet of surface water

per year in Phase1 and 18,500 acre-feet of surface water in Phase 2. The water treatment plant and water transmission line were completed in 2005, and surface water deliveries to the cities began in July of 2005.

The surface water deliveries are scheduled to increase until full capacity of 18,500 acre-feet per year is reached. The project is planned in two phases. Phase 1 planned to provide up to 11,500 acre-feet through 2010. Phase 2 would be constructed after 2010 and would provide up to 18,500 acre-feet by 2027. Timing of Phase 2 will depend on the water demand in each of the participating cities. At present, Phase 2 has not been designed or funded and is not included in the water supply assessment for the proposed project.

Reclaimed Water

The Urban Water Management Plan and the 2005 Water Master Plan include reclaimed water in future water planning. Reclaimed water requires construction of tertiary filters and disinfection facilities to meet Title 22 Reclamation Criteria. A reclaimed water distribution system is also required. Recent NPDES disposal and treatment requirements required the construction of tertiary filters and disinfection facilities. The treatment requirements make the use of reclaimed water for landscape irrigation feasible in some areas of the City, but use is limited by the lack of a reclaimed water distribution system. At present, reclaimed water is available for construction sites and is planned for irrigation of the Big League Dream sports complex. Additional landscape irrigation with reclaimed water is anticipated in the future and is projected to reach 2,300 acre-feet per year by 2030. The use of reclaimed water for landscape irrigation will reduce the City's water demand and help extend the available water supply.

Groundwater Management

The San Joaquin County Flood Control and Water Conservation District adopted a groundwater management plan for San Joaquin County in 2004, which includes much of the Eastern San Joaquin County Groundwater Basin. The City of Manteca participated in the development of the groundwater management plan. A major objective of the groundwater management plan is to stabilize the groundwater level in the central and eastern portions of the basin.

The City of Manteca plans to manage its groundwater use to meet the safe aquifer yield for the area, which has been estimated at 1 acre-foot per acre per year. Historically, Manteca extracted groundwater at a rate of 2.4 acre-feet per acre per year. Both the Water Master Plan and the Urban Water Management Plan recognize the overdraft in the basin. The City began reducing its groundwater extraction to the safe aquifer yield when the surface water became available in 2005.

Water Supply Reliability

Water supply reliability is addressed in the Urban Water Management Plan. In past droughts, the groundwater supply has been very reliable. Groundwater levels dropped during severe droughts but recovered in subsequent years. However, there has been a long-term drop in groundwater levels

(approximately 4 feet since 1964) in the Manteca area. The drop in groundwater is due to both the local groundwater pumping and the severe overdraft in the central and eastern portions of the groundwater basin. The combined effort of Manteca and the San Joaquin County Groundwater Management Plan to reduce groundwater overdraft should help maintain the historical reliability of Manteca's groundwater. The City's water supply history from 1970 through 2010 is included in Table 3.12-8.

Table 3.12-8: City of Manteca Water Production History

Year	Population	Acres		Annual Groundwater Use		Annual Surface Water Use		Annual Average Day Use (million gallons per day)
		Developed Area	Total City Area	Acre-Feet	Million Gallons	Acre-Feet	Million Gallons	
1970	13,824	1,831	1,927	3,115	1,015	—	—	2.78
1975	17,750	2,466	2,835	3,901	1,271	—	—	3.48
1980	23,150	3,169	4,063	5,785	1,885	—	—	5.16
1985	32,545	3,353	4,299	8,621	2,809	—	—	7.70
1990	40,733	4,300	6,320	9,873	3,217	—	—	8.81
1995	44,111	4,600	7,372	10,631	3,464	—	—	9.49
2000	51,655	5,837	10,126	12,608	4,108	—	—	11.25
2005	63,389	7,281	10,975	11,275	3,674	3,667	1,194.8	13.34
2006	64,488	8,393	10,975	8,062	2,627	6,739	2,195.8	13.21
2007	66,123	8,393	11,211	9,119	2,971	6,364	2,073.5	13.82
2008	67,754	8,426	11,318	8,557	2,788	6,884	2,243.1	13.78
2009	68,847	—	—	7,157	2,332	7,050	2,297.0	12.68

Notes:
Surface water delivery began in 2005.
Source: City of Manteca, 2010.

SSJID supplies surface water to the South County Water Project from Stanislaus River and has pre-1914 water rights to this water source. With the construction of New Melones Reservoir, the SSJID entitlement was negotiated with the DWR to 300,000 acre-feet per year. The entitlement is subject to reductions when the New Melones inflow is less than 600,000 acre-feet. An examination of the inflows between 1922 and 2000 indicated that SSJID would have received its full allocation of 300,000 acre-feet in all but 16 years during this period. The severity of possible reductions was estimated by examining the three lowest inflow years of 1977, 1924, and 1988, which would have reduced SSJID's allocation by 37, 24, and 23 percent, respectively. Conservation and increased groundwater development can sustain reductions of this order. Based on SSJID water rights and minimal reductions in past low flow years, the surface water supply is considered a reliable source.

To assure water supply reliability, Manteca plans to construct additional groundwater wells to maintain full water supply with a 50-percent reduction in surface water supply.

The long-term overdraft of the basin groundwater poses a water supply reliability threat from the intrusion of saline water. Surface water supplies will enable groundwater pumping to be reduced the in Manteca area and reduce the intrusion of saline water into the area.

Water Quality

Changes in water quality standards have the potential to reduce available groundwater available to the City. Water quality standards are reviewed regularly by the EPA and may result in revising existing allowable contaminant levels or establishing limits for new contaminants. The City monitors regulatory actions that can affect City water supplies. The most recent standard revision was for arsenic. The revised limit and the City's response to maintain water the water supply is discussed below. The federal Maximum Contaminant Level (MCL) for arsenic was lowered from 50 micrograms per liter (µg/l) to 10 µg/l in 2001. The State of California also adopted the 10 µg/l arsenic MCL. The revised federal arsenic MCL became effective in 2006. Twelve of the 16 city wells exceed the 10 µg/l MCL, with concentrations ranging from 12 to 19 µg/l. To maintain the City water supply, Manteca installed arsenic treatment at six wells and will install arsenic treatment at the remaining six wells in 2010.

Changes in groundwater water quality also have the potential to reduce the amount of groundwater available to the City. For example, three city wells exceeded the nitrate MCL in 2006. The affected wells were shut down until the elevated nitrate problem was resolved. Well modifications were completed at two wells in 2008 and restored 3,500 gallons per minute (gpm) of the lost production capacity. A water blending project will be completed in 2010 that will restore an additional 1,100 gpm of lost production capacity. There was a loss of 500 gpm in well capacity that was due to the sealing of strata with the high nitrate concentrations in Well 24.

Transmission and Distribution System

The City's existing water distribution system consists of a buried network of pipelines ranging from 1- to 6-inch pipelines in the older parts of the City to 8- to 16-inch diameter pipes in the newer areas. The distribution system conveys water from the sources to customers and must provide capacity to meet all domestic, industrial, irrigation, and fire suppression demands. Because of the distributed nature of the groundwater wells, large transmission lines are not needed to move large volumes of water around the City.

Project Vicinity Infrastructure

No water transmission and distribution lines exist on the project site. Underground potable water pipelines would be extended to the project site from the surrounding area.

Wastewater

The City of Manteca Public Works Department, Sewer Division provides wastewater collection and treatment within the city limits.

Wastewater Collection

The existing sewer collection system consists of 6-inch to 60-inch-diameter gravity flow pipes, 6-inch to 24-inch-diameter force mains, and 14 wastewater pump stations. The overall wastewater collection system for the City of Manteca is divided into North Shed, Central Shed, South Shed, and Southwest Shed. The majority of the existing collections serve the core of the City (Central Shed), which is approximately bounded by State Route 120 (SR-120) on the south, Austin Road on the east, Lathrop Road on the north, and Airport Way on the west. The South and Southwest sheds primarily include the areas south of State Route 120 that are approximately bounded by E. Nile Avenue and E. Sedan Avenue on the south, Walthall Slough on the east, SR-120 on the north, and Calla Drive on the west. Several subdivisions located within the South and Southwest sheds have installed temporary wastewater pump stations. In the future, these pump stations will be decommissioned and these service areas will connect to the gravity trunk sewers.

The City's Wastewater Master Plan Update proposes the construction of three large-diameter trunk sewers to collect wastewater from the north, central, and south sections of the City. The gravity collection system then will convey all the City wastewater to an influent pump station located at the Wastewater Quality Control Facility (WQCF).

Project Vicinity Infrastructure

There are no existing sewer lines adjacent to the project site. According to the Wastewater Collection System Master Plan, the nearest sewer line is within S. McKinley Avenue and is 30 inches in diameter.

Wastewater Quality Control Facility

Wastewater is treated at the Manteca Wastewater Quality Control Facility, located at Airport Way and W. Yosemite Avenue. The facility provides wastewater treatment to the City of Manteca as well as the City of Lathrop and the unincorporated community of Raymus Village. The facility currently treats approximately 6.5 million gallons of wastewater per day (gpd), and has been rated with a capacity of approximately 9.877 million gpd. The facility treats sewage via combined biofilter-activated sludge plant. Secondary effluent is land-applied during the spring and summer period and tertiary effluent is discharged to the San Joaquin River during the winter (October through March). Dried sludge is sent to a landfill.

Wastewater Quality

The City's wastewater treatment plant is governed by a federal NPDES permit. The City is required by law to have its permit reviewed every 5 years by the Regional Water Quality Control Board (the State's regulating agency for the NPDES permit program). On October 9, 2009, the Central Valley

Regional Water Quality Control Board adopted a revised wastewater discharge permit that governs the City of Manteca's operation of its wastewater treatment facility. The wastewater treatment plant is operating in compliance with the permit. The permit is still in effect at the time of this writing.

Storm Drainage

Storm drainage in Manteca is provided by the City of Manteca. The City of Manteca Public Works Department, Sewer Division oversees storm drainage within the city limits. The City's Storm Drainage System consists of approximately 150 miles of pipeline, 50 pump stations, and 35 detention basins. Runoff flows through this system and into SSJID facilities. City's General Plan identifies policy that requires the construction of detention or retention basins to handle all onsite drainage from a new development (City of Manteca 2003a).

Project Vicinity Infrastructure

Agricultural drainage ditches are the only drainage facilities onsite. The facilities ultimately convey runoff to Walthall Slough south of the project site.

Solid Waste

The City of Manteca Public Works Department, Solid Waste Division provides solid waste garbage service for the Manteca area.

Landfills

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. All three landfills are summarized in Table 3.12-9.

Table 3.12-9: Landfill Summary

Landfill	Location	Maximum Daily Throughput (tons/day)	Remaining Capacity (cubic yards)	Anticipated Closure Date
Forward Sanitary	Manteca	8,668	23.7 million	2020
Foothill Sanitary	Linden	1,500	97.9 million	2054
North County	Victor	825	15.3 million	2035
Source: Cal Recycle, 2010.				

Waste Diversion Targets

Table 3.12-10 summarizes the City of Manteca's disposal rate targets, as identified by Cal Recycle.

Table 3.12-10: City of Manteca Disposal Rate Targets

Pounds per Day			
Population		Employment	
Target	Annual	Target	Annual
5.1	5.6	21.1	21.6
Source: Cal Recycle, 2010.			

Energy

Pacific Gas and Electric Company (PG&E) provides electricity and natural gas service to the City of Manteca. Below is a discussion of each energy source.

Electricity

PG&E provides electricity to all or part of 47 counties in California, including San Joaquin County, constituting most of the northern and central portions of the State. In 2009, PG&E obtained 36 percent of electricity from its own generation sources and the remaining 62 percent from outside sources. PG&E-owned generating facilities include nuclear, natural gas, and hydroelectric, with a net generating capacity of more than 6,800 megawatts. Outside suppliers to PG&E include the California Department of Water Resources, irrigation districts, renewable energy suppliers, and other fossil fuel-fired suppliers. PG&E operates approximately 141,000 circuit miles of transmission and distribution lines. PG&E is interconnected with electric power systems in the western Electricity Coordinating Council, which includes 14 western states; Alberta and British Columbia, Canada; and parts of Mexico. In 2009, PG&E delivered 85,625 gigawatt-hours (GWh) of electricity to its customers.

SSJID is currently attempting to purchase PG&E's distribution system in southern San Joaquin County and enter the retail power business, servicing Manteca, Ripon, Escalon, and adjoining rural areas. Should this transaction be completed, SSJID would become the electrical provider to the City of Manteca.

Natural Gas

PG&E provides natural gas to all or part of 39 counties in California, including San Joaquin County, comprising most of the northern and central portions of the State. PG&E obtains more than 70 percent of its natural gas supplies from western Canada and the balance from U.S. sources. PG&E operates approximately 48,000 miles of transmission and distribution pipelines. In 2009, PG&E delivered 845 billion cubic feet (Bcf) of natural gas to its customers.

3.12.3 - Regulatory Framework

State

California Building Standards Code

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, is a compilation of three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national and international model codes.
- Building standards that have been adopted and adapted from the national and international model code standards to meet California conditions.
- Building standards, authorized by the California legislature, that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns.

The California Fire Code is a component of the California Building Standards Code and contains fire-safety-related building standards.

California Green Building Standards Code

The California Green Building Standard Code was adopted January 12, 2009. The purpose of this code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories:

- Planning and design
- Energy efficiency
- Water efficiency and conservation
- Material conservation and resource efficiency
- Environmental air quality

The Code addresses exterior envelope, water efficiency, and material conservation components. The aim is to reduce energy usage in non-residential buildings by 20 percent by 2015 and help meet reductions contemplated in AB 32. With the 2008 Building Code, a 15-percent energy reduction over 2007 edition is expected. Compliance will be mandatory as of January 1, 2011.

California Urban Water Management Planning Act

The Urban Water Management Planning Act (California Water Code Sections 10610–10656) requires that all urban water suppliers with at least 3,000 customers prepare urban water management plans and update them every 5 years. The act requires that urban water management plans include a description of water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions. Specifically, urban water management plans must:

- Provide current and projected population, climate, and other demographic factors affecting the supplier's water management planning;
- Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier;

- Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage;
- Describe plans to supplement or replace that source with alternative sources or water demand management measures;
- Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis (associated with systems that use surface water);
- Quantify past and current water use;
- Provide a description of the supplier's water demand management measures, including schedule of implementation, program to measure effectiveness of measures, and anticipated water demand reductions associated with the measures;
- Assess the water supply reliability.

Pursuant to the Urban Water Management Planning Act, the City of Manteca prepared and maintains an Urban Water Management Plan.

Model Water Efficient Landscape Ordinance

The Model Water Efficient Landscape Ordinance was adopted by the Office of Administrative Law in September 2009 and requires local agencies to implement water efficiency measures as part of its review of landscaping plans. Local agencies can either adopt the Model Water Efficient Landscape Ordinance or incorporate provisions of the ordinance into code requirements for landscaping. For new landscaping projects of 2,500 square feet or more that require a discretionary or ministerial approval, the applicant is required to submit a detailed Landscape Documentation Package that discusses water efficiency, soil management, and landscape design elements.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State Legislature passed Assembly Bill (AB) 939, the California Integrated Waste Management Act of 1989, effective January 1990. The legislation required each local jurisdiction in the State to set diversion requirements of 25 percent by 1995 and 50 percent by 2000; established a comprehensive statewide system of permitting, inspections, enforcement, and maintenance for solid waste facilities; and authorized local jurisdictions to impose fees based on the types or amounts of solid waste generated. In 2007, Senate Bill (SB) 1016, Wiggins, Chapter 343, Statutes of 2008, introduced a new per capita disposal and goal measurement system that moves the emphasis from an estimated diversion measurement number to using an actual disposal measurement number as a per capita disposal rate factor. As such, the new disposal-based indicator (pounds per person per year) uses only two factors: a jurisdiction's population (or in some cases employment) and its disposal as reported by disposal facilities.

Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings

Title 24, Part 6, of the California Code of Regulations establishes California's Energy Efficiency Standards for Residential and Nonresidential Buildings. The standards were updated in 2005 and amended in 2008. The 2008 standards set a goal of reducing growth in electricity use by 561.2 gigawatt-hours per year (GWh/y) and growth in natural gas use by 19 million therms per year (therms/y). The savings attributable to new nonresidential buildings are 151.2 GWh/y of electricity savings and 3.3 million therms. For nonresidential buildings, the standards establish minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., heating, ventilation, and air conditioning [HVAC]; and water heating systems), indoor and outdoor lighting, and illuminated signs.

Local

City of Manteca

General Plan

The General Plan establishes the following goals and policies associated with public services and utilities that are relevant to the proposed project:

- **Policy CD-P-33**: Passive solar design features are encouraged whenever possible. Design of buildings should consider energy-efficient concepts such as natural heating and/or cooling, sun and wind exposure and orientation, and other solar energy opportunities.
- **Policy CD-P-46**: Provide automatic shutoff or motion sensors for lighting features in newly developed areas.
- **Goal ED-12**: Enhance recreational and educational opportunities in the community.
- **Policy ED-P-23**: Infrastructure needed to serve new development shall be the responsibility of new development and not existing residents.
- **Goal ED-17**: Assure adequate public infrastructure is available at the right place and the right time to serve economic development opportunities.
- **Goal ED-19**: Assure that new development provides funding for necessary infrastructure.
- **Policy ED-P-24**: Public infrastructure adequate to serve planned economic growth should be available and properly phased.
- **Policy ED-P-25**: Private infrastructure particularly low cost power, and high capacity telecommunications should be available at the right place and the right time.
- **Goal PF-3:** Facilities improvements and services required to serve development will not place an economic burden on existing residents of the City. Development will pay a fair share of all costs of required public infrastructure and services.
- **Goal PF-4:** Public improvements and facilities will be designed to enhance, rather than degrade, the natural environment in the City and surrounding area.
- **Goal PF-5:** The City's public services and facilities will support economic development and residential growth in the City.

- **Policy PF-P-2:** Encourage comprehensive development rather than incremental, single project development.
- **Goal PF-7:** Maintain an adequate level of service in the City's water system to meet the needs of existing and projected development.
- **Policy PF-P-6:** The City shall develop new water sources as necessary to serve new development.
- **Policy PF-P-7:** The City shall develop new water storage facilities and major distribution lines as necessary to serve new development.
- **Policy PF-P-11:** The City will develop and implement water conservation measures as necessary elements of the water system.
- **Policy PF-P-12:** The City shall continue to assess a water development fee on all new commercial, industrial, and residential development sufficient to fund system-wide capacity improvements. The water development fee schedule shall be periodically reviewed and revised as necessary.
- **Policy PF-P-13:** Ensure that all new development provides for and funds a fair share of the costs for adequate water distribution, including line extensions, easements, and plant expansions.
- **Policy PF-P-17:** The City of Manteca shall consider incremental increases in the demands on groundwater supply and water quality when reviewing development applications.
- **Goal PF-8:** Maintain an adequate level of service in the City's sewage collection and disposal system to meet the needs of existing and projected development.
- **Policy PF-P-18:** Ensure wastewater collection and treatment for all development in the City and the safe disposal of wastes.
- **Policy PF-P-20:** The City shall develop new sewage treatment and trunk line capacity as necessary to serve new development.
- **Policy PF-P-24:** Ensure that all new development provides for and funds a fair share of the costs for adequate sewer distribution, including line extensions, easements, and plant expansions.
- **Goal PF-9:** Maintain an adequate level of service in the City's drainage system to accommodate runoff from existing and projected development and to prevent property damage due to flooding.
- **Policy PF-P-26:** The City shall continue to complete gaps in the drainage system in areas of existing development.
- **Policy PF-P-27:** The City shall require the dedication and improvement of drainage detention basins as a condition of development approval according to the standards of the Drainage Master Plan. The responsibility for the dedication and improvement of detention basins shall be based on the prorated share of stormwater runoff resulting from each development.
- **Policy PF-P-28:** Storm drainage systems within new development areas shall include open drainage corridors where feasible to supplement or replace an underground piped drainage system. The drainage systems would provide for short-term storm water detention, storm

water conveyance for storm waters exceeding a 10-year event, storm water quality treatment, bike and pedestrian paths, and visual open space within neighborhoods. The width and length of the corridors would be determined by the stormwater management requirements. The drainage systems would provide a pedestrian connection between parks and access to open space from residential neighborhoods. The neighborhoods would be designed with homes oriented to, rather than backing on the open space corridor.

- **Goal PF-10:** The City shall ensure adequate, reliable electric service is available to all users in the City.
- **Policy PF-P-29:** Ensure that reliable, adequate electric service is available to all users in the City.
- **Goal PF-11:** Provide for the implementation and enforcement of the provisions for the Source Reduction and Recycling Element, as mandated by the State.
- **Goal PF-12:** Maintain efficient, effective and economical solid waste services for the residents, businesses and visitors to Manteca.
- **Policy PF-P-31:** The City will implement and enforce the provisions of its Source Reduction and Recycling Element.
- **Goal PF-13:** Maintain sufficient land inventory so that the Manteca Unified School District can provide for the educational needs of Manteca residents.
- **Policy PF-P-33:** The City shall cooperate with the Manteca Unified School District and others in locating and reserving appropriate sites for new neighborhood walking distance schools. Adequate facilities shall be planned to accommodate new residential development and endeavor to create neighborhood schools.
- **Policy PF-P-34:** The City shall cooperate with the Manteca Unified School District in their collection of school facility development fees from new development.
- **Policy PF-P-35:** Financing of new school facilities will be planned concurrent with new development.
- **Policy PF-P-39:** The City shall endeavor through adequate staffing and patrol arrangements to maintain the minimum feasible police response times for police calls.
- **Policy PF-P-40:** The City shall provide police services to serve the existing and projected population.
- **Policy PF-P-43:** The City shall endeavor through adequate staffing and station locations to maintain the minimum feasible response time for fire and emergency calls.
- **Policy PF-P-44:** The City shall provide fire services to serve the existing and projected population.
- **Goal PF-14:** Establish and maintain a park system and recreation facilities that support economic development and residential growth in the City.
- **Goal PF-15:** Establish and maintain a park system and recreation facilities that are suited to the needs of Manteca residents and visitors.
- **Goal PF-16:** Promote the provision of private recreational facilities and opportunities.

- **Policy PF-P-46:** The City shall expand the community and neighborhood park system with the goal of providing neighborhood park facilities within reasonable walking distance of all city residential areas.
- **Policy PF-P-47:** The City shall use joint development of park and drainage detention basins in the development of neighborhood parks.
- **Policy PF-P-49:** City park acquisition and development efforts shall be based on a goal of 5 acres of developed neighborhood and community parkland per 1,000 residents within the city limits. The distribution of land between neighborhood and community parks shall be determined within the Parks and Recreation Master Plan.
- **Policy PF-P-50:** Neighborhood parks shall conform to the following general guidelines (specific details and standards to be determined within the Parks and Recreation Master Plan):
  - The typical minimum size shall be set to support active and passive recreation activities.
  - The typical service area for a neighborhood park is approximately ¼ mile walking distance.
  - Neighborhood parks shall include a turf area above the basin flood line of sufficient area to be used for playgrounds, sports, picnic areas, and other recreational facilities.
- **Policy PF-P-53:** All new residential development will be required to pay a park acquisition and improvement fee, based on providing 5 acres per 1,000 residents, to fund system-wide improvements.
- **Policy PF-P-54:** The City shall require the provision of private open space and recreational facilities as part of new residential developments.
- **Policy S-P-9:** Combine flood control, recreation, water quality, and open space functions where feasible.
- **Policy RC-P-2:** The City shall explore potential uses of treated wastewater when such opportunities become available.
- **Policy PF-P-54:** The City shall require water conservation in both City operations and private development to minimize the need for the development of new water resources.
- **Policy RC-P-4:** The City shall require the provision of private open space and recreational facilities as part of new residential developments.
- **Goal RC-5:** Promote energy efficiency in new development and in building design.
- **Policy RC-P-6:** Comply with construction and design standards that promote energy conservation.
- **Policy RC-P-7:** Conserve public utilities.
- **Policy RC-P-8:** Conserve petroleum products.
- **Policy RC-P-9:** The City shall support use of alternative energy sources in new commercial, industrial and residential development.
- **Policy RC-P-17:** Provide access to public open space areas.
- **Policy H-P-36:** The City shall work with the Manteca Unified School District to ensure the availability of adequate school facilities to meet the needs of projected households in Manteca.
- **Policy H-P-38:** The City will maintain an adequate level of public services and infrastructure to meet the needs of existing and projected development, within the fiscal capacity of the City.

- **Policy H-P-39:** The City shall ensure within fiscal limitations that park and recreation facility acquisitions and improvements keep pace with residential development.
- **Policy H-P-40:** The City shall ensure that housing developments pay their own way in terms of financing public facilities and services.
- **Policy H-P-49:** The City shall promote the use of energy conservation features in the design of all new residential structures.
- **Policy H-P-50:** The City shall encourage residential construction of durable materials and designs suited to the local conditions that will contribute to reduction of the life-cycle cost of the dwelling.
- **Goal H-7 - Energy conservation:** Residential energy costs can impact the affordability of housing in that increasing utility costs decrease the amount of income available for rents or mortgage payments. Manteca has many opportunities to directly affect energy use within its jurisdiction. Title 24 of the California Administrative Code sets forth mandatory energy standards for new housing development, and requires adoption of an "energy budget." Some of the alternative ways to meet the State energy standards include:
    - Alternative 1: The passive solar approach, which requires proper solar orientation, appropriate levels of thermal mass, south facing windows, and moderate insulation levels.
    - Alternative 2: Generally requires higher levels of insulation than Alternative 1, but has no thermal mass or window orientation requirements.
    - Alternative 3: Also is without passive solar design, but requires active solar water heating in exchange for less stringent insulation and/or glazing requirements.

3.12.4 - Methodology

This section is based on the information provided by a number of sources, which are described below.

Michael Brandman Associates (MBA) consulted with the Manteca Fire Department and the Manteca Police Department about their ability to serve the proposed project. Manteca Unified School District was also contacted to evaluate impacts on school facilities. The agency responses are provided in Appendix J.

The Manteca Public Works Department, Engineering Division prepared a Water Supply Assessment to evaluate the ability of the City of Manteca to meet the water supply demand associated with the proposed project. A water supply assessment is required to comply with water supply planning requirements of the California Water Code and Government Code. Water supply assessments are required for residential developments of more than 500 dwelling units. Much of the information required in the Water Supply Assessment is included in the City of Manteca 2005 Urban Water Management Plan. Additional information is contained in the City of Manteca Water Master Plan. The complete Water Supply Assessment is provided in Appendix J.

MBA obtained information regarding wastewater and storm drainage from the Manteca Municipal Services Review, prepared by the San Joaquin County Local Agency Formation Commission in June 2008. Additionally, MBA reviewed relevant city documents, including the General Plan, the Municipal Code, and the Urban Water Management Plan. Finally, MBA reviewed documents and websites produced by Cal Recycle and PG&E.

3.12.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, public services and utilities impacts resulting from the implementation of the proposed project would be considered significant if the project would:

> 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:
>
> a) Fire Protection?
> b) Police Protection?
> c) Schools?
> d) Parks? (Refer to Section 7, Effects Found Not To Be Significant.)
> e) Other public facilities? (Refer to Section 7, Effects Found Not To Be Significant.)

To determine whether impacts to utilities and services are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
- Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?
- Comply with federal, state, and local statutes and regulations related to solid waste?
- Result in inefficient, wasteful, or unnecessary consumption of energy?

3.12.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Fire Protection and Emergency Medical Services

Impact PSU-1:	**The proposed project may contribute to a need for new or expanded fire protection facilities.**

Impact Analysis

This impact assesses whether the proposed project would result in a need for new or expanded fire protection and emergency medical service facilities.

The Fire Department provided written responses to a questionnaire regarding impacts to fire protection and emergency medical services. The responses are summarized below and a copy of the document is provided in Appendix J.

The Department receives an estimated 137 calls annually from a similar proposed development. The estimated calls by call type that the proposed project would generate on an annual basis are described as follows:

- Fires—8
- Emergency Medical Services (EMS)—95
- Hazardous Conditions—4|
- Service Calls—9
- Good Intent Calls—18
- False Alarm and False Calls—3

The Fire Department indicated Fire Station No. 2 is the closest existing fire station and can service the project area with a response time of 5 to 7 minutes, depending on the location of the emergency. The Fire Department has a response time objective of arriving on scene within 5 minutes of dispatch for all emergencies. The department staffing level from existing fire stations and infrastructure within the City provides for the highest level of service in the vicinity for the project area. Therefore, construction of an additional fire station staffed with firefighters and apparatus will be needed to service the project area and to achieve the Fire Department's 5-minute response standard.

The Fire Department indicated that a fire station (with staffing/equipment) in this southwest area is third on the priority list for fire service needs within the City of Manteca. First priority is the fire station in the northwest area of the City at the 1400 block of Lathrop Road, followed by the fire station in the southeast area at E. Woodward Road and Atherton Drive (near SR-99). The City has secured land for these sites and architectural designs are in progress.

To ensure that the proposed project contributes to the implementation of a future fire station, mitigation is proposed requiring payment of all applicable fire prevention development fees at the time building permits are sought. With the implementation of mitigation, impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM PSU-1 Prior to issuance of building permits, the project applicant shall provide the City of Manteca will all applicable fire protection development fees in accordance with the latest adopted fee schedule.

Level of Significance After Mitigation

Less than significant impact.

Police Protection

Impact PSU-2: The proposed project would not contribute to a need for new or expanded police protection facilities.

Impact Analysis

This impact assesses whether the proposed project would result in a need for new or expanded police protection facilities.

The Police Department provided written responses to a questionnaire regarding impacts to police protection. The responses are summarized below and a copy of the document is provided in Appendix J.

According to the written response dated August 12, 2010 (Appendix J), the proposed project would add an estimated 5,016 residents to the City of Manteca resulting in an additional 2,608 calls for service per year. The Manteca Police Department currently has 59 sworn police officers, including the chief of police, two captains, one lieutenant, and 10 sergeants. This equals an officer-per-1,000-residents ratio of 0.87, and it means that each officer handled 599 calls a year on average. The proposed project's addition of 5,016 residents and 2,608 calls for service would require four additional officers to maintain the response times listed above and the per-1,000-resident ratio. The command staff and most off patrol assignments do not handle calls for service, but are included in standard officer-per-1,000-residents calculations.

The Police Department indicated that the residential property tax collected by the general fund should adequately cover the additional officers needed to serve the future residents. Once the houses are built and occupied, the police department would ask for increased officers in future budgets in an attempt to maintain the per-officer ratio and response times. In addition, the project applicant would be required to pay the required development impact fees as established by City ordinance. Consequently, impacts on police protection services would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Schools

Impact PSU-3: The proposed project may result in the need for new or expanded school facilities over and above those already planned.

Impact Analysis

This impact assesses whether the proposed project would result in a need for new or expanded school facilities.

The proposed project would include the development of 1,650 dwelling units, which would directly cause population growth and increase enrollment in the local school districts. MUSD provided a letter dated September 21, 2010 that indicated that the proposed project would be expected to generate 953 students, broken down by grades as follows:

- K–6: 538 students
- 7–8: 151 students
- 9–12: 264 students

MUSD indicated that there is a need for a new elementary and a new high school in the project vicinity and that these new facilities would serve the proposed project. MUSD noted that it has purchased a site for the high school, but has not yet acquired the elementary school site. Until these new school facilities are developed, project students would attend Nile Garden School and Veritas Elementary School, and Sierra High School.

The proposed project would mitigate its impact on the need for new school facilities through the payment of school fees in accordance with the latest adopted fee schedule at the time building permits are sought. These fees would be used for capital improvements to school facilities and may be used to fund the construction of the planned elementary and high schools in the project vicinity.

Government Code Section 65995 prohibits a local agency from either denying approval of a land use project because of inadequate school facilities or imposing school impact mitigation measures other than designated fees. Therefore, payment of development fees to MUSD would address the proposed project's impacts on schools. Payment of these fees is reflected in Mitigation Measure PSU-3. With the implementation of this mitigation measure, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM PSU-3 Prior to issuance of building permits, the project applicant shall provide the Manteca Unified School District with all applicable school development fees in accordance with the latest adopted fee schedule. The applicant shall submit a receipt to the City of Manteca prior to issuance of building permits verifying that all fees have been paid.

Level of Significance After Mitigation

Less than significant impact.

Parks and Recreation

Impact PSU-4: The proposed project may necessitate the construction of new park or recreational facilities, or cause substantial physical deterioration of existing park and recreational facilities.

Impact Analysis

This impact assesses whether the proposed project would result in a need for new or expanded park and recreation facilities.

The proposed project would cause direct population growth by constructing 1,650 residential units. Using the City of Manteca's 2010 average household size of 2.961, the proposed project would increase the City's population by 4,826 persons. In order to maintain the City's established ratio of 5 acres of park land per 1,000 residents, the project applicant would need to add 24.13 acres of parkland. As such, Mitigation Measure PSU-4 requires the applicant to pay all park-related development fees at the time building permits are sought. The payment of these fees would satisfy the applicant obligation in this regard.

The proposed project includes the development of a trail system throughout the site of over 12 miles that will eventually connect to the City facilities. The proposed project also includes over 75 acres of linear parks and a clubhouse to be utilized by the residents. As such, a provision in Mitigation Measure PSU-4 allows the City to provide the applicant with fee credits for the provision of these onsite park and recreational facilities, if deemed appropriate.

With the payment of park fees or the provision of onsite park and recreational facilities, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM PSU-4 Prior to issuance of building permits, the project applicant shall provide the City of Manteca with all the applicable park development fees in accordance with the latest adopted fee schedule. The City shall have the discretion to provide the project applicant with fee credits for the provision of onsite park and recreational facilities, if deemed appropriate.

Level of Significance After Mitigation

Less than significant impact.

Library

Impact PSU-5: The proposed project may require the construction or expansion of library facilities over and above those already planned.

Impact Analysis

This impact assesses whether the proposed project would result in a need for new or expanded library facilities.

As stated above, the proposed project is projected to add 4,826 residents to the City of Manteca's population, which could result in increased use of local libraries. As such, Mitigation Measure PSU-5 requires the applicant to pay all library-related development fees at the time building permits are sought. The payment of these fees would satisfy the applicant's obligation. With the payment of library fees, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM PSU-5 Prior to issuance of building permits, the project applicant shall provide the City of Manteca with all the applicable library development fees in accordance with the latest adopted fee schedule.

Level of Significance After Mitigation

Less than significant impact.

Water

Impact PSU-6: **The proposed project may not be served with sufficient water supplies from existing entitlements and resources and may require the construction of new water treatment facilities.**

Impact Analysis

This impact assesses whether proposed project would be served with sufficient water supplies or result in the construction of new water treatment facilities.

The Water Supply Assessment's water demand projections for the proposed project are summarized in Table 3.12-11. The proposed project's water demand consists of potable water and landscape irrigation demands. As shown in the table, the estimated peak-hour demand plus a 15-percent redundancy for the development is 2,192 gallons per minute (gpm). The water demand is based on a gross residential demand of 0.474 gpm per single-family dwelling unit, and 0.258 gpm per multi-family dwelling unit. The gross demand considers the historical per capita water demand of 214 gallons per day, which includes commercial and industrial demand. The use of the gross demand in the residential water supply planning provides water for commercial, industrial, and institutional uses that serve the community. A peak to average demand ratio of 2.8 is applied to average demand to determine peak-hour demand. The peak-hour demand is increased by 15 percent for water supply reliability.

Table 3.12-11: Estimated Water Demand

Dwelling Type	Count	Average Day Demand (gallons per day)	Maximum Day Demand (gallons per day)	Peak-Hour Demand (gallons per minute)
Multi-family	472	202,629	405,257	394
Single-family	1,178	924,688	1,849,371	1,798
Total	**1,650**	**1,127,315**	**2,254,628**	**2,192**
Source: City of Manteca, 2010.				

Table 3.12-12 reconciles the proposed project's demand with the available supplies. As shown in the table, adequate supplies are available to meet average day and maximum day demands; however, adequate supplies are not available for peak-hour demand.

Table 3.12-12: Water Demand/Supply Comparison

	City Water Demand With Proposed Project	Available Water Supply	Water Supply Balance	Required Supply for Proposed Project
Average Day Demand (gallons per day)	19,731,000	24,537,000	4,806,000	—
Maximum Day Demand (gallons per day)	39,462,000	49,074,000	9,612,000	—

Table 3.12-12 (cont.): Water Demand/Supply Comparison

	City Water Demand With Proposed Project	Available Water Supply	Water Supply Balance	Required Supply for Proposed Project
Peak-Hour Demand (gallons per minute)	38,366	37,079	(1,287)	1,287
Source: City of Manteca, 2010.				

The current peak water supply is 37,079 gpm and consists of surface water from the South County Water Supply Project, City of Manteca groundwater from 17 wells, and the planned Well 26 Storage Tank. The projected peak water demand with the proposed project is 38,366 gpm. To meet the additional water demand of 1,287 gpm, the project applicant will need to provide a site for a new groundwater well with a minimum capacity of 1,278 gpm and fund the construction of the well. The project applicant would also pay for any expansion or improvements to the water distribution system. The groundwater well may require treatment for arsenic or other contaminants. Specific treatment requirements can be determined upon drilling a test well. Water distribution system improvements required for the developments will include the extension of existing water lines to the development. The specific water distribution system requirements can only be determined when tentative maps are submitted for approval and may require water system modeling. This obligation is reflected in Mitigation Measure PSU-6a.

In addition, because the Water Supply Assessment's conclusions partially rely on the assumption of water conservation and reclaimed water use, Mitigation Measures PSU-6b and PSU-6c are proposed requiring that the proposed project would implement appropriate and feasible measures to reduce potable water consumption. With the implementation of mitigation, water supply impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM PSU-6a Prior to approval of the final map, the applicant shall identify the location of a new well with a minimum capacity of 1,287 gallons per minute. If located onsite, the final map shall depict the location of the well and necessary infrastructure. If located offsite, the applicant shall provide the City with fees equivalent to the full cost of site acquisition. The applicant shall either (1) construct the well in accordance with City standards or (2) provide the City with the fees equivalent to the full cost of construction of the well. The well and associated infrastructure shall be operational prior to issuance of the first certificate of occupancy for any dwelling unit. Final flow estimates and needed water system improvements shall be determined by the City of Manteca based on detailed construction plans, and water system modeling.

MM PSU-6b Prior to issuance of building permits, the applicant shall prepare and submit documentation to the City of Manteca for review and approval identifying a non-potable irrigation system that is separate from the potable water systems. The non-potable irrigation system shall use non-potable well water until recycled water is available, at which point it shall be converted to use recycled water.

MM PSU-6c Prior to issuance of building permits, the applicant shall prepare and submit documentation to the City of Manteca for review and approval identifying that all appropriate and feasible water conservation measures are incorporated into the proposed use(s). The approved measures shall be incorporated into the final development plans. Examples of water conservation measures include but are not limited to:

- Drought-tolerant landscaping or xeriscaping
- Water efficient irrigation systems (drip irrigation, bubbler/soaker systems, hydrozones, evapotranspiration controllers, etc.)

Level of Significance After Mitigation

Less than significant impact.

Wastewater

Impact PSU-7: The proposed project's effluent would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board and would not require the construction of new wastewater treatment facilities.

Impact Analysis

This impact assesses whether the proposed project would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board or result in the construction of new wastewater treatment facilities.

Underground wastewater pipelines would be extended to the project site. Wastewater collection and treatment would be provided by the City of Manteca.

According to the City's Municipal Services Review, Manteca's target level of service for sewer is to collect an average of 265 gallons per day per dwelling unit equivalent. This standard is applicable both in the areas of Manteca that have already developed and in the geographic areas where development is expected. Therefore, the proposed project would generate 437,250 gpd of wastewater. The City of Manteca Water Quality Control Facility currently treats approximately 6.5 million gpd, and has been rated with a capacity of approximately 9.877 million gpd. The addition of 437,250 gpd (or 0.44 million gpd) of wastewater would represent 13 percent of the 3.37 million gpd of available capacity. Furthermore, the Water Quality Control Facility is in compliance with all federal and state water quality standards.

Sewage disposal for the project site would be provided via connection to the City's sewer system. Ultimately, wastewater will flow south of the project site by gravity flow to the South Manteca Trunk Sewer. The City's Wastewater Collection System Master Plan indicates that the Southwest Service Area is west of the Water Quality Control Facility and south of SR-120, beyond the gravity service limits of the South Manteca Trunk System. Because of the low ground elevations and large size of this area, a regional pump station was recommended. Trunk sewers from the southwest areas would flow into the regional pump station. A force main would extend from the regional pump station to the South Manteca Trunk System. The South Manteca Trunk System would converge at the influent pump station for the Water Quality Control Facility.

However, the South Manteca Trunk System will not be constructed until sufficient funds are collected through development fees. In the interim, the proposed project will construct a sewer pump station and new force main to an existing pump station as determined by the City. This interim system would provide sufficient collection and conveyance for the proposed project's wastewater. Mitigation Measure PSU-7 is recommended to ensure sufficient collection, conveyance, and treatment exist or would be built for the proposed project.

As described in the City's General Plan, the project applicant would be responsible for paying the required sewer connection and capacity fees. The project's internal wastewater conveyance system would be designed and constructed in conformance with the City's standards. Project land uses would discharge into the onsite collection lines that will extend and connect to the City's sewer system.

With the implementation of Mitigation Measure PSU-7, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM PSU-7 Prior to approval of the final map, the applicant shall identify the location and characteristics of a new sewer pump station and the alignment and characteristics of a new force main to an existing pump station necessary to serve the proposed project. The City shall review and approve the location, alignment, and characteristics of the pump station and force main. The applicant shall either (1) construct the pump station and force main or (2) provide the City with fees equivalent to the full cost of the improvements. The pump station and force main shall be operational prior to issuance of the first certificate of occupancy for any of the dwelling units.

Level of Significance After Mitigation

Less than significant impact.

Storm Drainage

Impact PSU-8: The proposed project would not result require the construction of new downstream drainage facilities.

Impact Analysis

This impact assesses whether the proposed project would result in the construction of new drainage facilities.

An onsite storm drainage would be installed to serve the proposed project. The collection system would consist of inlets and subsurface piping. Runoff would be conveyed to the onsite detention basis. From there, runoff would be released into Walthall Slough via an outfall and swale.

Low-impact design will be encouraged for the proposed project. The project area storm drain conveyance system will consist of both open channels where feasible and an underground pipe network. This network of piping and channels will flow into a series of onsite detention basins strategically placed to allow development flexibility and to adequately store storm drainage runoff from the project area. Basins will be sized to attenuate a 10-year, 48-hour storm event. The basins would be designed to empty within a maximum 96-hour period, which establishes the minimum discharge rate. The outfall pipes would be designed to restrict the flow out of the development areas to minimize the offsite runoff rate, but at the same time allow the basins to empty within a maximum of 96 hours. It is anticipated that in most cases the basins would empty faster than 96 hours, because there will be a continuous discharge from the basins throughout the storm event along with percolation and evaporation. The City would review the drainage plan to ensure consistency with the Storm Drain Master Plan. The project site will be required to treat its stormwater runoff prior to entering the storm drain conveyance system and regional storm drainage detention basins.

Unless a drainage plan is designed and implemented properly, runoff volumes and peak flows generated on the developed project site could increase significantly and create downstream drainage problems. The project proponent would implement a plan that will keep the volume of runoff equal to or less than existing conditions in order to avoid these potential impacts.

To ensure that such a system is implemented, Mitigation Measure HYD-4 in Section 3.8, Hydrology and Water Quality proposes requiring the project applicant to install a drainage system that meets this performance standard and, prior to issuance of grading permits, provide a drainage plan and report to the City of Manteca for review and approval. With the implementation of this mitigation measure, drainage impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure HYD-4.

Level of Significance After Mitigation

Less than significant impact.

Solid Waste

Impact PSU-9: **The proposed project may not be served by a landfill with adequate capacity or comply with federal, state, and local statutes and regulations related to solid waste.**

Impact Analysis

This impact assesses whether the proposed project would be served by a landfill with adequate capacity or would comply with federal, state, and local statutes and regulations related to solid waste.

Construction and operational solid waste generation characteristics are discussed separately below.

Construction Waste Generation

Short-term construction waste generation is summarized in Table 3.12-13. The estimate of 8,002 tons was calculated using demolition and residential construction waste generation rates provided by the U.S. Environmental Protection Agency.

Table 3.12-13: Demolition and Construction Solid Waste Generation

Activity	Waste Generation Rate	Square Feet	Waste Generation (Tons)
Demolition	155 pounds/square foot	10,000*	775
Construction	4.38 pounds/square foot	3.3 million*	7,227
Total	**—**	**—**	**8,002**

Notes:
* Project site buildings estimated to total approximately 10,000 square feet based on visual observation.
** Because exact square footage for residential dwelling is not known at this time, an average square footage of 2,000 was used for the 1,650 dwelling units.
1 ton = 2,000 pounds
Source: U.S. Environmental Protection Agency, 1998; Michael Brandman Associates, 2010.

Given the amount of construction waste that would be generated, there is the potential that this could impair the City's ability to meet its state-mandated solid waste targets. As such, mitigation is proposed that would require construction and demolition debris recycling to be implemented. The implementation of this mitigation measure would reduce potential impacts to a level of less than significant.

Operational Waste Generation

Operational solid waste generation estimates were calculated using a standard residential waste generation rate provided by Cal Recycle. As shown in Table 3.12-14, the proposed project is estimated to generate 2,494.4 tons of solid waste annually.

Table 3.12-14: Operational Solid Waste Generation

Land Use	Waste Generation Rate	Units	Waste Generation	
			Daily	Annually
Single-Family Residential	10 pounds/dwelling unit/day	1,178	11,780 pounds (5.89 tons)	2,150 tons
Multiple-Family Residential	4 pounds/dwelling unit/day	472	1,888 pounds (0.94 ton)	345 tons
Total		**1,650**	**13,668 pounds (6.83 tons)**	**2,495 tons**

Notes
1 ton = 2,000 pounds
Source: Cal Recycle, 2010; Michael Brandman Associates 2010.

Given the amount of construction waste that would be generated, there is the potential that this could impair the City's ability to meet its state-mandated solid waste targets. The single-family residential dwelling units would be served with curbside solid waste and recycling collection service, which is a standard municipal service provided to all single-family residences. As such, it can be reasonably assumed that the single-family dwelling units would have convenient access to recycling services. However, multi-family residential uses typically employ centralized solid waste collection facilities and do not always offer convenient recycling options. To ensure that that the multi-family residential uses provide onsite recycling collection facilities, mitigation is proposed requiring the provision of such facilities. The implementation of this mitigation measure would reduce potential impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM PSU-9a Prior to issuance of building permits, the project applicant shall retain a qualified contractor to perform construction and demolition debris recycling. Following the completion of construction activities, the project applicant shall provide documentation to the satisfaction of the City of Manteca demonstrating that construction and demolition debris was recycled.

MM PSU-9b Prior to issuance of final certificate of occupancy for each multi-family residential building, the project applicant shall install onsite recycling collection facilities. Such facilities shall be provided in centralized locations within enclosed facilities. Signage shall clearly identify accepted materials, and recycling collection vessels (i.e., dumpsters, receptacles, bins, toters, etc.) shall be distinctly different in appearance from solid waste collection vessels.

Level of Significance After Mitigation

Less than significant impact.

Energy

Impact PSU-10: The proposed project would not result in the inefficient, wasteful, or unnecessary use of energy.

Impact Analysis

This impact assesses whether the proposed project would result in the inefficient, wasteful, or unnecessary use of energy.

Table 3.12-15 summarizes the estimated annual electricity and natural gas consumption estimates for the proposed project. The demand figures shown in the table are derived from the most recent PG&E 10-K annual report.

Table 3.12-15: Energy Demand Estimate

Energy Source	Consumption Rate	Dwelling Units	Estimated Annual Demand
Electricity	6,953 kWH/dwelling unit	1,650	11.5 million kWH
Natural Gas	48,000 cf/dwelling unit		79.2 million cf

Notes:
kWH = kilowatt hours
cf = cubic feet
Consumption rates provided by PG&E 10-K annual report.
Source: Michael Brandman Associates, 2010.

The proposed project design standards will be subject to the most recently adopted edition of the Title 24 energy efficiency standards at the time building permits are sought. The Title 24 standards include a number of requirements associated with energy conservation and, therefore, ensure that the proposed project would not result in the inefficient, wasteful, or unnecessary use of energy. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

3.13 - Transportation

3.13.1 - Introduction

This section describes the existing transportation setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the Transportation Impact Analysis, prepared in September 2010 by Fehr & Peer and included in this EIR as Appendix K.

3.13.2 - Environmental Setting

Study Area

The study area shown on Exhibit 3.13-1 was selected based on the proposed project's expected travel characteristics (e.g., location and amount of project trips) as well as facilities susceptible to being significantly impacted by the project. The study area is generally bounded by Interstate 5 (I-5) on the west, Main Street on the east, Yosemite Avenue on the north, and the Manteca City Limits on the south.

Exhibit 3.13-1 shows the 14 intersections that were selected for analysis under weekday AM and PM peak hour conditions. In addition to these offsite intersections, this study analyzes freeway segments and ramps on State Route 120 (SR-120) between I-5 and Main Street.

Roadway System

The following describes the freeway facilities and local roadways that would serve the project.

State Route 120

SR-120 is an east-west four-lane freeway within the study area that connects I-5 and SR-99 through south Manteca. It features interchanges at Yosemite Avenue/Guthmiller Road, Airport Way, Union Road, and Main Street.

Woodward Avenue

Woodward Avenue is an east-west street that begins near the Weatherbee Lake Subdivision and extends in a generally east-west direction parallel to SR-120, terminating at Moffat Boulevard near SR-99. It forms the northern boundary of the project site. West of Airport Way, Woodward Avenue is generally one lane in each direction, although a second westbound through lane has been constructed along the frontage of new developments on the north side of the street. The posted speed limit on Woodward Avenue varies from 35 to 45 miles per hour (mph) between its western terminus and Airport Way.

Airport Way

Airport Way is a north-south road that extends from downtown Stockton into Manteca, and continues south beyond SR-120 into unincorporated San Joaquin County. South of Woodward Avenue, Airport Way is a two-lane rural undivided road with a posted speed limit of 55 mph. Between Woodward Avenue and SR-120, Airport Way is a two-lane street with a posted speed limit of 40 mph. It widens

to four lanes from SR-120 northerly to Daniels Street, narrowing to two lanes beyond this intersection.

McKinley Avenue

McKinley Avenue is a two-lane rural street that extends northerly from Woodward Avenue under SR-120 to Yosemite Avenue and beyond. Between Woodward Avenue and Yosemite Avenue, it has a posted speed limit of 45 mph and permits passing in certain sections.

Yosemite Avenue

Yosemite Avenue is an east-west, two- to four-lane roadway that provides access to the central portion of the City of Manteca. It extends from the SR-120/Yosemite Avenue interchange in the west to its interchange with SR-99 in the east, where it becomes SR-120.

Table 3.13-1 displays the average daily traffic volume on study segments of Airport Way, Woodward Avenue, and McKinley Avenue based on counts collected in June 2010.

Table 3.13-1: Average Daily Traffic Volumes – Existing Conditions

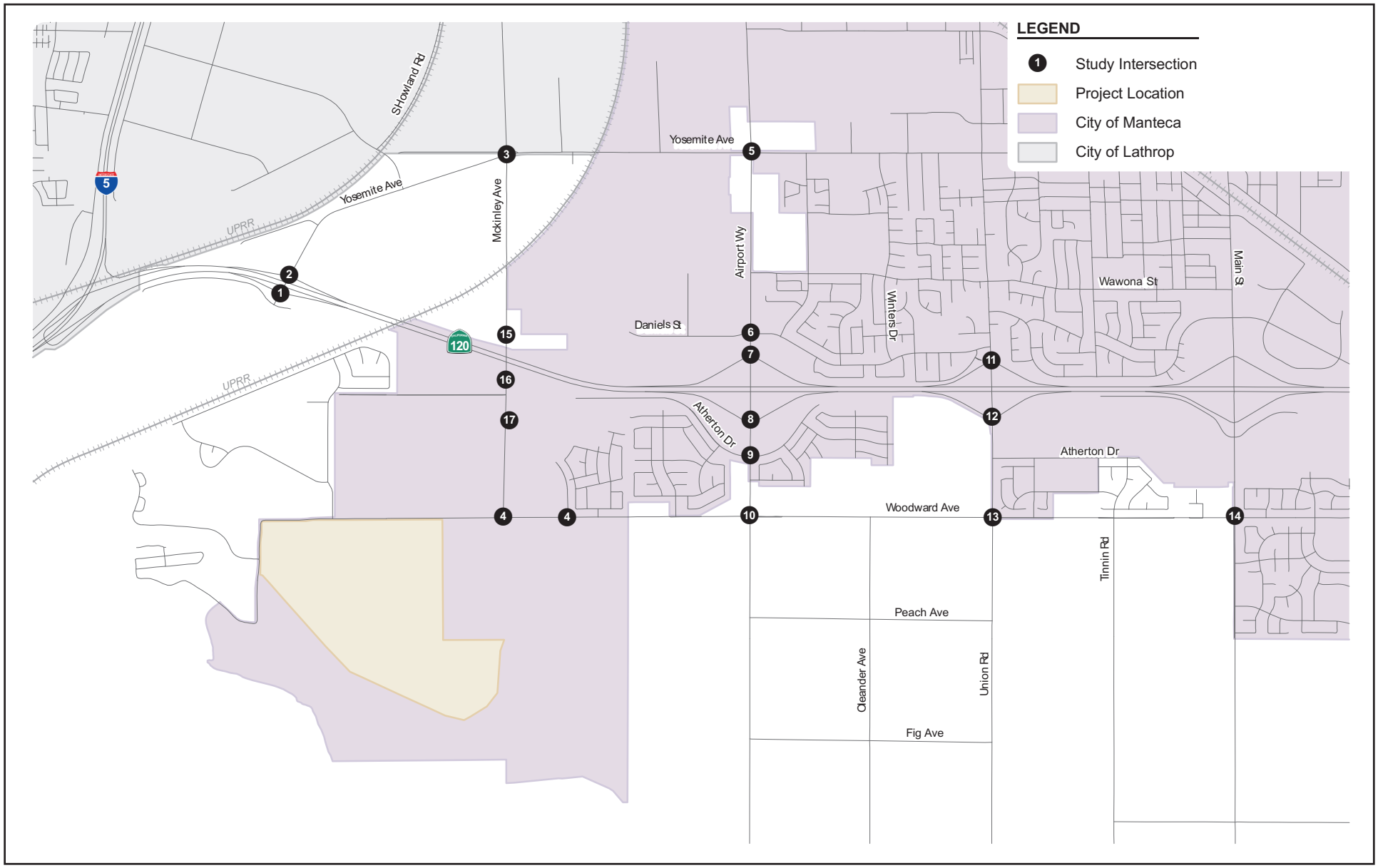
	Roadway	Number of Lanes	Average Daily Traffic
1	Woodward Avenue – McKinley Avenue to Galleria Drive	2	1,100
2	Woodward Avenue – Galleria Drive to Airport Way	2	2,200
3	Woodward Avenue – Airport Way to Union Road	2	1,900
4	Airport Way – South of Woodward Avenue	2	2,400
5	Airport Way – Woodward Avenue to Atherton Drive	2	4,600
5	Airport Way – Atherton Drive to SR-120	2	8,500
6	Airport Way – SR-120 to Daniels Street	4	16,400
7	McKinley Avenue – Woodward Avenue to Yosemite Avenue	2	900

Notes:
Source: Fehr and Peers Transportation Consultants, 2010.

Intersection Operations

Level of Service

Exhibit 3.13-2 displays the existing AM and PM peak-hour turning movement volumes at the 14 study intersections. New counts were collected at seven study intersections along Airport Way and Woodward Avenue in June 2010. Because of recent retail development near the SR-120/Union Road interchange, new counts were collected during the PM peak hour in late August 2010. Traffic counts from 2008–2009 were used at the Yosemite Avenue/McKinley Avenue, Yosemite Avenue/Airport Way, and Daniels Street/Airport Way intersections. As shown, six intersections are signalized, with the remaining intersections controlled by stop signs.



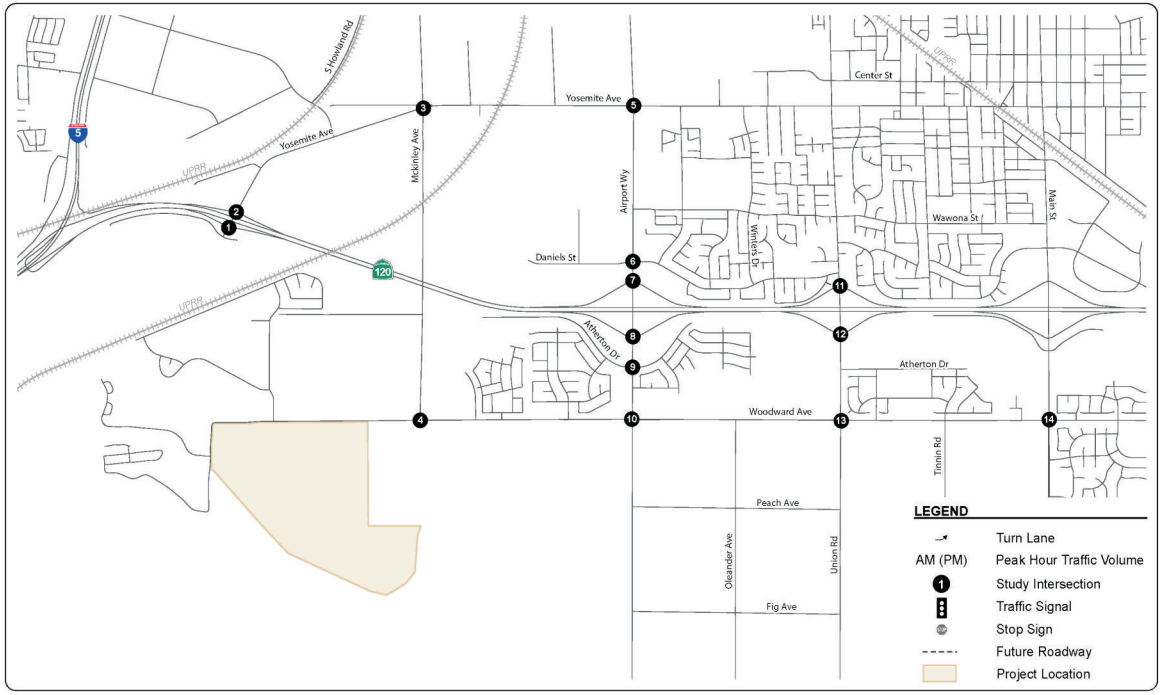
Source: Fehr & Peers Transportation Consultants.

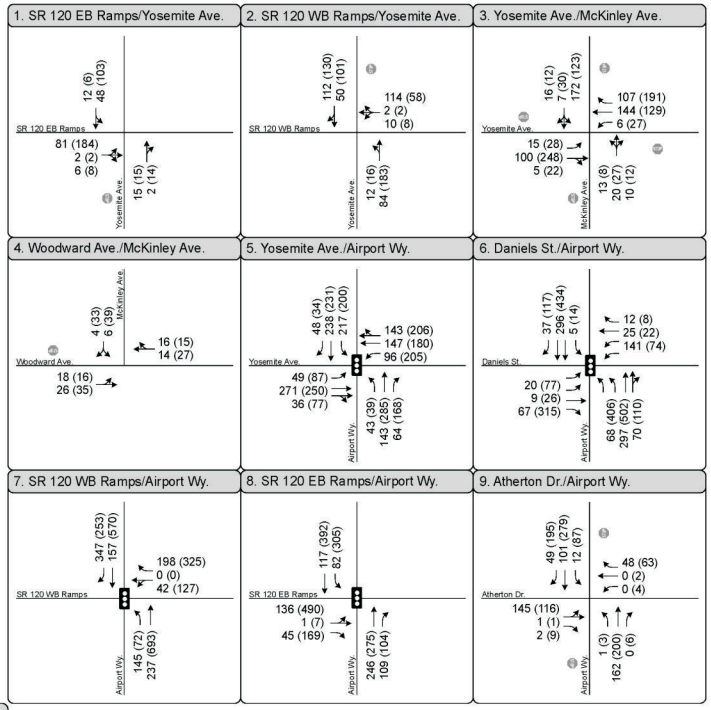
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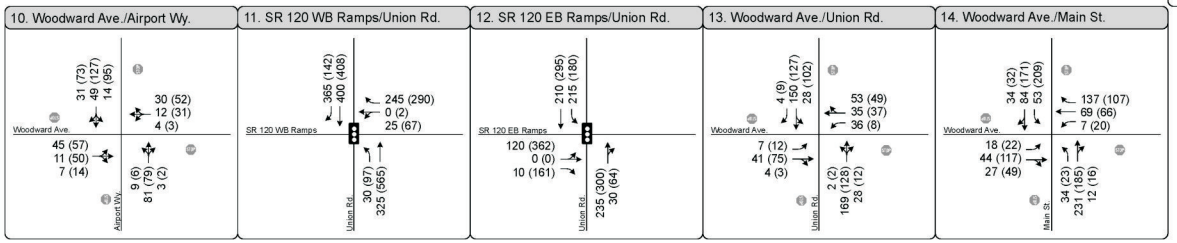
Michael Brandman Associates

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Exhibit 3.13-1
Project Location and Study Intersections







Source: Fehr & Peers Transportation Consultants.

Exhibit 3.13-2
Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

The operations of the roadway system are described using the level of service (LOS) concept. LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, with the least congested operating conditions, to LOS F, with the most congested operating conditions. LOS E represents "at-capacity" operations. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions.

The level of service method for signalized intersections analyzes operations based on average control vehicular delay, as described in Chapter 16 of the 2000 Highway Capacity Manual (HCM) by the Transportation Research Board. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections was calculated using the Synchro analysis software and is correlated to an LOS designation, as shown in Table 3.13-2. Operations at the SR-120/Airport Way interchange and adjacent intersections were analyzed in SimTraffic to account for potential queues and congestion affecting adjacent intersections.

Table 3.13-2: Intersection Levels of Service Thresholds

Level of Service	Signalized Intersection Control Delay (sec/veh)[1]	Unsignalized Intersection Control Delay (sec/veh)[1]	General Description
A	0–10.0	0–10.0	Little to no congestion or delays; free flow
B	10.1–20.0	10.1–15.0	Limited congestion, short delays
C	20.1–35.0	15.1–25.0	Modest delays and stable flow
D	35.1–55.0	25.1–35.0	High density, heavy delays, but stable flow
E	55.1–80.0	35.1–50.0	Operations at or near capacity
F	>80.0	>50.0	Over-capacity, breakdown flow

Notes:
[1] Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay.
Source: Transportation Research Board, 2000.

Operations of unsignalized study intersections are evaluated using the method contained in Chapter 17 of the 2000 HCM. At two-way or side-street stop-controlled intersections, control delay is reported for the minor movement with the worst control delay, not for the intersection as a whole. For approaches composed of a single lane, control delay is computed as the average of all movements in that lane. For all-way stop-controlled intersections, the LOS is based on the weighted average control delay of all movements. The LOS designations for unsignalized intersections are also presented in Table 3.13-2.

A peak-hour signal warrant analysis was conducted for all unsignalized study intersections. The analysis applied the peak-hour traffic signal warrant recommended in the California Manual on Uniform Traffic Control Devices. It should be noted that the peak-hour signal warrant is only one of

several warrants that are evaluated to determine the need for a traffic signal. Even when the peak-hour signal warrant is satisfied, the decision to install a signal should not be based solely upon this factor. The City of Manteca, City of Lathrop, San Joaquin County, and the California Department of Transportation (Caltrans) should regularly monitor traffic conditions and accident data, and evaluate the full set of warrants in order to prioritize and program intersections for signalization.

Existing Intersection Operations

The study intersections were analyzed in accordance with procedures described previously. Table 3.13-3 displays the average delay and LOS at each intersection during the AM and PM peak hours. This table also displays the form of traffic control (signal, stop signs) and jurisdiction associated with each intersection. According to this table, all study intersections currently operate at LOS D or better during the AM and PM peak hours. None of the unsignalized study intersections currently satisfies the peak-hour warrant for consideration of a traffic signal.

Table 3.13-3: Peak-Hour Intersection Level of Service – Existing Conditions

Intersection		Jurisdiction	Control	Peak Hour	Existing Conditions	
					Average Delay (sec/veh)	LOS
1	SR-120 WB Ramps/Yosemite Avenue	Caltrans	Side Street Stop	AM	10	A
				PM	13	B
2	SR-120 EB Ramps/Yosemite Avenue	Caltrans	Side Street Stop	AM	10	A
				PM	10	B
3	Yosemite Avenue/McKinley Avenue	City of Lathrop	All Way Stop	AM	8	A
				PM	9	A
4	Woodward Avenue/McKinley Avenue	City of Manteca	Side Street Stop	AM	9	A
				PM	9	A
5	Yosemite Avenue/Airport Way	City of Manteca	Traffic Signal	AM	32	C
				PM	35	C
6	Daniels Street/Airport Way	City of Manteca	Traffic Signal	AM	15	B
				PM	24	C
7	SR-120 WB Ramps/Airport Way	Caltrans	Traffic Signal	AM	10	B
				PM	16	B
8	SR-120 EB Ramps/Airport Way	Caltrans	Traffic Signal	AM	13	B
				PM	43	D
9	Atherton Drive/Airport Way	City of Manteca	Side Street Stop	AM	9	A
				PM	20	C

Table 3.13-3 (cont.): Peak-Hour Intersection Level of Service – Existing Conditions

Intersection		Jurisdiction	Control	Peak Hour	Existing Conditions	
					Average Delay (sec/veh)	LOS
10	Woodward Avenue/Airport Way	City of Manteca	All Way Stop	AM	8	A
				PM	10	B
11	SR-120 WB Ramps/Union Road	Caltrans	Traffic Signal	AM	9	A
				PM	12	B
12	SR-120 EB Ramps/Union Road	Caltrans	Traffic Signal	AM	14	B
				PM	22	C
13	Woodward Avenue/Union Road	City of Manteca	All Way Stop	AM	11	B
				PM	10	A
14	Woodward Avenue/Main Street	City of Manteca	All Way Stop	AM	11	B
				PM	12	B
Source: Fehr and Peers Transportation Consultants, 2010.						

Freeway Operations

Level of Service

Freeway mainline segments and ramp junctions were evaluated using average existing (April–June 2010) mainline weekday AM and PM peak-hour traffic volumes from Caltrans's Performance Measurement System database. Table 3.13-4 displays the level of service thresholds for freeway mainline and ramp merge/diverge operations.

Table 3.13-4: Freeway Facility Level of Service Thresholds

Level of Service	Mainline Density[1]	Ramp Merge/Diverge[1]	General Description
A	≤ 10	≤ 10	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.
B	> 11 to 18	> 10 to 20	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.
C	> 18 to 26	> 20 to 28	Flow with speeds at or near free flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.
D	> 26 to 35	> 28 to 35	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited.

Table 3.13-4 (cont.): Freeway Facility Level of Service Thresholds

Level of Service	Mainline Density[1]	Ramp Merge/Diverge[1]	General Description
E	> 35 to 45	> 35 to 43[2]	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver.
F	**	**	Represents a breakdown in flow.

Notes:
[1] Density in passenger cars per mile per lane (pcpmpl).
[2] The maximum density for ramp junctions under LOS E is not defined in the HCM 2000. This report uses the maximum density of 43 passenger cars per mile per lane identified for weaving sections in the HCM 2000.
** Demand flow exceeds capacity.
Source: Fehr and Peers Transportation Consultants, 2010.

Existing Freeway Operations

Table 3.13-5 displays the existing level of service at the ramp junctions and freeway mainline study segments of SR-120 between I-5 and Main Street. As shown, all freeway study facilities currently operate at LOS D or better with the exception of eastbound SR-120 between I-5 and Yosemite Avenue and the SR-120 eastbound off-ramp diverge at Yosemite Avenue and at Airport Way, each of which operates at LOS E during the PM peak hour.

Table 3.13-5: Peak-Hour Freeway Level of Service – Existing Conditions

Facility		Type	Peak Hour	Existing Conditions	
				Density (pc/ph/pl)	LOS
1	SR-120 Eastbound from I-5 to Yosemite Avenue	Mainline	AM	18	B
			PM	35	E
2	SR-120 Eastbound from Yosemite Avenue to Airport Way	Mainline	AM	18	B
			PM	34	D
3	SR-120 Eastbound from Airport Way to Union Road	Mainline	AM	18	B
			PM	31	D
4	SR-120 Eastbound from Union Road to Main Street	Mainline	AM	19	C
			PM	28	D
5	SR-120 Eastbound off-ramp at Yosemite Avenue	Ramp Diverge	AM	21	C
			PM	36	E
6	SR-120 Eastbound off-ramp at Airport Way	Ramp Diverge	AM	21	C
			PM	36	E
7	SR-120 Eastbound off-ramp at Union Road	Ramp Diverge	AM	21	C
			PM	34	D

Table 3.13-5 (cont.): Peak-Hour Freeway Level of Service – Existing Conditions

Facility		Type	Peak Hour	Existing Conditions	
				Density (pc/ph/pl)	LOS
8	SR-120 Eastbound on-ramp from Yosemite Avenue	Ramp Merge	AM	20	B
			PM	34	D
9	SR-120 Eastbound on-ramp from Airport Way	Ramp Merge	AM	20	B
			PM	32	D
10	SR-120 Eastbound on-ramp from Union Road	Ramp Merge	AM	21	C
			PM	29	D
11	SR-120 Westbound from Main Street to Union Road	Mainline	AM	26	C
			PM	24	C
12	SR-120 Westbound from Union Road to Airport Way	Mainline	AM	27	D
			PM	23	C
13	SR-120 Westbound from Airport Way	Mainline	AM	29	D
			PM	22	C
14	SR-120 Westbound from Yosemite Avenue to I-5	Mainline	AM	29	D
			PM	23	C
15	SR-120 Westbound off-ramp at Union Road	Ramp Diverge	AM	29	D
			PM	27	C
16	SR-120 Westbound off-ramp at Airport Way	Ramp Diverge	AM	30	D
			PM	26	C
17	SR-120 Westbound off-ramp at Yosemite Avenue	Ramp Diverge	AM	32	D
			PM	25	C
18	SR-120 Westbound on-ramp from Union Road	Ramp Merge	AM	28	D
			PM	25	C
19	SR-120 Westbound on-ramp from Airport Way	Ramp Merge	AM	30	D
			PM	24	C
20	SR-120 Westbound on-ramp from Yosemite Avenue	Ramp Merge	AM	30	D
			PM	24	C
Source: Fehr and Peers Transportation Consultants, 2010.					

The two-lane segment of McKinley Avenue between SR-120 and Yosemite Avenue was analyzed in accordance with San Joaquin County policies. Operations are currently at LOS A during the AM and PM peak hours.

Public Transit

Transit service in the City of Manteca is provided by Manteca Transit. The San Joaquin Regional Transit District (SJRTD) provides fixed-route and flexible-response bus service in San Joaquin County. The nearest transit stop to the project site is located north of SR-120 at Airport Way and Daniels Street (Stadium Center). Routes 1, 2, and 3 stop at this location on weekdays between 6:30 a.m. and 7:00 p.m.

The Manteca Transit Short Range Transit Plan (2009) does not envision expanding the City's transit service to the immediate project vicinity within the next 5 years. However, it does acknowledge the need for additional transit service for the existing and planned retail developments along the SR-120 corridor.

The Altamont Corridor Express (ACE) is a commuter rail train service that operates between Stockton and the Bay Area. The Lathrop-Manteca ACE station is located on Shideler Parkway, which is directly north of Yosemite Avenue and east of McKinley Avenue. This station is about a 5-minute drive from the project site. On weekdays, commuter rail service is provided by three westbound trains (departing the Lathrop-Manteca ACE Station at 4:37 a.m., 5:52 a.m., and 6:57 a.m.) and three eastbound trains (arriving at the Lathrop-Manteca ACE Station at 5:21 p.m., 6:21 p.m., and 7:21 p.m.).

Bicycles and Pedestrians

Pedestrian facilities in the project vicinity include sidewalks along the frontage of developed properties on Woodward Avenue and Airport Way. A Class I (separated, off-street) bike path is located along Atherton Drive. A Class II (on-street with designated signing and striping) bike lane exists on portions of Airport Way from south of SR-120 to Woodward Avenue.

The Final Manteca Bikeway Master Plan (2003) shows a future bikeway system that would include Class II lanes along Airport Way and the Class I paths along the extension of Atherton Drive. Bike facilities are not shown on Woodward Avenue within the project vicinity.

Rail

The Union Pacific Railroad Oakland Subdivision is located approximately 0.5 mile northwest of the project site. The rail line connects the San Francisco Bay Area with Sacramento via the Altamont Pass. In the Manteca area, the rail line enters from the southwest near the I-5/SR-120 interchange and turns northward towards Stockton.

Grade Crossings

The Oakland Subdivision features two at-grade crossings within 2 miles of the project site: McKinley Avenue and Yosemite Avenue. Of the two crossings, the McKinley Avenue crossing is of most concern, because it is the closest to the project site and would be used by a greater percentage of project trips that the Yosemite Avenue crossing.

The McKinley Avenue at-grade crossing has advanced warning signs, railroad crossing pavement markings, stop lines, crossing gates, flashing lights, and warning bells. According to United States Department of Transportation Crossing Inventory, an average of 13 trains per day cross this segment of McKinley Avenue. Data regarding the number of accidents at this crossing was not available from the U.S. Department of Transportation website.

3.13.3 - Regulatory Framework

State

California Department of Transportation

California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, operating, and maintaining all state-owned roadways in San Joaquin County. Federal highway standards are implemented in California by Caltrans. Any improvements or modifications to the state highway system within the City of Manteca need to be approved by Caltrans, and the City of Manteca has no ability to unilaterally make improvements to the state highway system.

The Interstate 5 Transportation Concept Report identifies a concept LOS of D for the segment from SR-120 to north of Roth Road. The report identifies the need for widening to eight lanes in the near future to relieve congestion, and ultimate widening to a 10-lane freeway.

The State Route 99 Transportation Concept Report identifies a concept LOS of D for the segment from SR-120 to north of French Camp Road. The report identifies the need for the ultimate need for eight lanes to meet projected travel demands.

Public Utilities Commission

The California Public Utilities Commission (CPUC) is the state agency responsible for rail safety and the agency's jurisdiction includes at-grade railroad crossings. CPUC approval is required to modify an existing railroad grade crossing or to construct a new crossing. Completion and submittal of a General Order 88-B is required for any proposed work to a grade crossing.

Local

San Joaquin County Regional Transportation Plan

San Joaquin County, through the San Joaquin Council of Governments (SJCOG), periodically updates the Regional Transportation Plan (RTP), which outlines countywide transportation expenditures based on funding from such sources as the federal government, the State of California, and locally collected funds. The current SJCOG RTP (2007) contains several proposed improvements that would benefit the regional roadway network within the study area.

San Joaquin County General Plan

The San Joaquin County General Plan is in the process of being updated. Until it is adopted, policies from the 1992 General Plan remain relevant. According to the San Joaquin County Traffic Impact Study Guidelines (November 2008), all County roadways shall operate at LOS C or better (except in

a City sphere of influence where the City has adopted LOS D). The segment of McKinley Avenue between SR-120 and Yosemite Avenue is in the unincorporated County and Lathrop Sphere of Influence. As noted below, an LOS C standard has been used in Lathrop for purposes of identifying impacts. Therefore, this study will evaluate the segment of McKinley Avenue within San Joaquin County based on an LOS C threshold. Consistent with the County's Traffic Impact Study guidelines, this segment will be analyzed because the HCM is a Class II highway.

San Joaquin County Congestion Management Program

SJCOG operates a Regional Congestion Management Program, which monitors cumulative transportation impacts of growth on the regional roadway system, identifies deficient roadways, and develops plans to mitigate the deficiencies. The Regional Congestion Management Program considers LOS E or F operations to be deficient and includes segments of I-5, SR-99, Airport Way, and Lathrop Road as Congestion Management Program facilities.

San Joaquin County Regional Traffic Impact Fee

SJCOG has implemented a regional traffic impact fee that is assessed on new developments throughout San Joaquin County. As of 2010, the fee schedule is as follows: $3,102 per single-family dwelling unit, $1,801 per multi-family dwelling unit, $1.20 per square foot for retail development, $1.51 per square foot for office development, and $0.90 for industrial development. These fees are adjusted annually to account for inflation, and the funds go toward adding capacity on regional roadways and state highways.

Measure K

Measure K is a San Joaquin County measure that funds transportation projects through a half-cent sales tax. Measure K includes funds for widening SR-99 to six lanes between Manteca and Stockton, interchange improvements at Lathrop Road/I-5, as well as other improvements.

City of Manteca

General Plan

The City of Manteca General Plan established the following goals and policies related to geology and soils that are applicable to the proposed project:

- **Goal C-1:** Provide for a circulation system that allows for the efficient movement of people, goods, and services within and through Manteca, based on land use and current improvement standards in conformance with the Public Facilities Implementation Plan.
- **Goal C-2:** Maintain a safe vehicular circulation system.
- **Goal C-5:** Ensure the adequate provision of both on-street and off-street parking.
- **Goal C-6:** Provide a safe secure bicycle route system.
- **Goal C-8:** Provide for safe and convenient pedestrian circulation.
- **Policy C-P-1:** The City shall strive to attain the highest possible traffic levels of service (LOS) consistent with the financial resources available and the limits of technical feasibility. The

impact of new development and land use proposals on LOS should be considered in the review process.

- **Policy C-P-2:** Manteca's target for transportation LOS is to provide City-wide average LOS of C or better, and a minimum of LOS D at any individual location. LOS C, LOS D, and the other Level of Service ratings as defined in current traffic engineering standards. This "C average, D minimum" shall be accomplished by attempting to provide LOS C at all locations, but accepting LOS D under the following circumstances:
    a. Where constructing facilities with enough capacity to provide LOS C is found to be unreasonably expensive.
    b. Where it is difficult or impossible to maintain LOS C because surrounding facilities in other jurisdictions operate at LOS D or worse.
    c. Where free-flowing roadways or interchange ramps would discourage use of alternate travel modes.
    d. Where maintaining LOS C will be a disincentive to use of existing alternative modes or to the implementation of new transportation modes that would reduce vehicle travel.
- **Policy C-P-3:** Streets shall be dedicated, widened, extended, and constructed according to the Street cross-section diagrams established in the City Improvement Standards. Dedication and improvement of full rights-of-way as shown in the Street Standards shall not be required in existing developed areas where the City determines that such improvements are either infeasible or undesirable.
- **Policy C-P-5:** Development which would necessitate roadway improvements prior to the development of lands abutting those roadway improvements shall be required to make such improvements, or participate in such improvements, as a condition of approval.
- **Policy C-P-6:** New development will pay a fair share of the costs of street and other traffic and transportation improvements based on traffic generation and impacts on levels of service in conformance with the standards and policies established in the Public Facilities Implementation Plan.
- **Policy C-P-8:** Street improvements will be designed to provide multiple, direct, and convenient traffic routes.
- **Policy C-P-12:** The City shall promote development of a perimeter road system along Lathrop Road, Austin Road, Woodward Avenue, and Airport Way.
- **Policy C-P-18:** In accord with the PFIP the City shall assess development fees for traffic signals and highway interchanges sufficient to fund system wide improvements. The development fee schedule for these traffic improvements shall be periodically reviewed, and revised as necessary.
- **Policy C-P-26:** The city shall require all new development to provide an adequate number of off-street parking spaces to accommodate the typical parking demands of the type of development on the site. In the downtown area, the City is responsible for development of parking facilities and new development is not required to provide parking.

- **Policy C-P-29:** Ensure that there is adequate parking for normal commercial activities.
- **Policy C-P-36:** Provide adequate bicycle parking facilities at commercial, business/ professional and light industrial uses.
- **Policy C-P-37:** Improve safety conditions, efficiency, and comfort for bicyclists and pedestrians. Provide shade and/or protection from wind and other weather conditions when possible.

Bicycle Master Plan

The City of Manteca Bicycle Master Plan (2003) includes the following policies related to bicycle circulation in new development areas that are relevant to this analysis:

- Require new development to construct bikeways included in the proposed system along all roadways included within or adjacent to that development.
- Require new development to provide support facilities such as bicycle racks, personal lockers, and showers at appropriate locations such as parks, major recreational destinations, park-and-ride facilities, employment centers, schools, and commercial centers.
- Provide bike crossings at appropriate intervals along new roadways that will adequately serve new large-scale commercial, office, industrial, and residential development.
- Require new development to incorporate parks and schools as important destinations for bicyclists when designing circulation plans for subdivisions and other developments.

Public Facilities Implementation Plan

The City of Manteca's Public Facilities Implementation Plan (PFIP) is the implementing document for the City's General Plan policies on public infrastructure facilities. The purpose of the PFIP is to ensure adequate provision of public facilities as the City grows, and that they are developed in accordance with the City's General Plan. The PFIP is based on the City's individual water, sewer, drainage, and transportation facilities master plans. Under the PFIP, development impact fees are collected at or near the time of development and are used to finance the capacity expansion of public facilities (such as water, sewer collection, drainage, and transportation) necessary to accommodate the new demands.

Since the 1993 PFIP was not indexed to inflation, the current fees do not cover the costs of building the required transportation infrastructure. The City is currently updating the PFIP to develop a new list of infrastructure projects and a revised fee. It is expected that the PFIP fee will fully cover the cost of improvements to the City's street system. The revised fee is expected to be adopted by the City Council by the end of 2010.

Table 3.13-6 displays the status and identified funding sources for various regional roadway improvements within the study area. Tier I projects in the RTP are those that the region intends to

fund, implement, and maintain during the plan period with identified revenue sources. They represent the region's fiscally constrained program for developing the transportation system. Tier II projects represent those that need to be built, implemented, and maintained during the plan period but have to be deferred until new funding resources materialize.

The 2007 and 2011 RTPs had a similar set of improvements and prioritization with a couple of exceptions. The 2007 RTP included improvements at the SR-120/Airport Way interchange as a Tier I project; the 2011 RTP lists this is a Tier II project. The 2011 RTP now includes the McKinley Avenue Expressway as a Tier I project, whereas it was not listed in the 2007 RTP.

As described in Impact TRANS-1 and Impact TRANS-2, this analysis will assume in place under cumulative conditions those projects that are listed as Tier I improvements in the 2011 RTP and are to be constructed by 2023, which is the horizon year of the City's General Plan. Several other surface street improvements that are not listed above are also assumed to be constructed as described in Impact TRANS-1 and Impact TRANS-2.

Table 3.13-6: Status of Planned Improvements in Study Area

Project	Included in Tier 1 List in 2011 RTP	Included in Measure K?	Included in RTIF?
SR-120 Widening—4 to 6 lanes from I-5 to SR-99 ($90.6M, Open to Traffic Date = 2027)	Yes	Yes	Yes
Upgrade SR-120/Yosemite Interchange ($22M, no Open to Traffic Date)	No	No	No
New SR-120/McKinley Interchange ($30M, Open to Traffic Date = 2020)	Yes	Yes	Yes
Upgrade SR-120/Airport Interchange ($18M, no Open to Traffic Date)	No	Yes	No
Upgrade SR-120/Union Interchange ($33M, Open to Traffic Date = 2015)	Yes	Yes	No
Airport Way Widening - 2 to 4 lanes from SR-120 to Lathrop Road ($7M, Open to Traffic Date = 2012)	Yes	No	Yes
McKinley Avenue Widening—2 to 4 lanes from SR-120 to Lathrop Road (not listed as Tier II, no Open to Traffic Date)	No	No	No
McKinley Avenue Expressway ($18M, Open to Traffic Date = 2019)	Yes	No	No
Notes: 120/Yosemite and SR-120/Airport interchanges listed as Tier II projects in 2011 RTP. Source: Fehr and Peers Transportation Consultants, 2010.			

City of Lathrop General Plan

The City of Lathrop General Plan identifies expected LOS C operations on city streets and LOS D operations at interchange ramps. The Lathrop Gateway Business Park Specific Plan Draft EIR (2010) applied an LOS C standard for city intersections for the purposes of identifying impacts.

3.13.4 - Methodology

Fehr & Peers prepared a Transportation Impact Study for the proposed project that evaluated impacts on transportation. The complete study is provided in Appendix K. Below are summaries of key aspects of the study.

Analysis Scenarios

The following scenarios were analyzed in the Transportation Impact Study:

- Existing Conditions
- Existing Plus Proposed Project Conditions
- Cumulative No Project Conditions
- Cumulative Plus Proposed Project Conditions

Project Travel Characteristics

Project Summary

The project site is located south of Woodward Avenue and west of Airport Way within the Manteca City Limits. The proposed project consists of the following trip generating land uses:

- 1,178 single-family dwelling units
- 192 townhomes/garden apartments; and
- 280 apartments

The project will include over 12 miles of bicycle/pedestrian trails. Access to the project would be provided onto Woodward Avenue by three new public street connections.

Trip Generation

Table 3.13-7 displays the project's expected daily, AM peak-hour, and PM peak-hour trip generation.

Table 3.13-7: Project Trip Generation

Land Use	Units	Trip Rate[1]			Trips		
		Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour
Single-Family Residential	1,178	9.57	0.75	1.01	11,274	884	1,190
Apartments	472	6.65	0.51	0.62	3,139	241	293
Total					**14,413**	**1,125**	**1,483**

Notes:
[1] Based on average trip rates from Trip Generation (Institute of Transportation Engineers, 2008).
[2] The trip generation of the 192 townhouses/garden apartments was calculated using the slightly higher apartment trip rates (versus Condominium/Townhouse trip rates) to provide a conservative analysis.
Source: Fehr and Peers Transportation Consultants, 2010.

As shown, the project would generate approximately 14,400 daily trips with 1,130 trips occurring during the AM peak hour and 1,480 trips occurring during the PM peak hour.

Exhibit 3.13-3 displays the expected distribution of trips under "Existing Plus Project" conditions. These percentages were derived from a variety of sources including:

- A project-only traffic assignment from the base year version of the SJCOG travel demand model.
- Locations of complementary land uses including schools (based on current school district boundaries from the school district website), shopping, parks, and other amenities.
- Relative travel time on competing routes such as travel to/from the west on SR-120 via the Airport Way interchange versus McKinley Avenue to the Yosemite Avenue interchange including differences in travel time for inbound versus outbound trips.

Exhibit 3.13-4 shows the expected distribution of project trips under cumulative conditions. The cumulative distribution is similar to that of existing, but considers planned roadway improvements discussed later in this chapter and new land use developments that may attract project trips. This exhibit shows that project trips would use the Atherton Drive extension to access McKinley Avenue. As is discussed later, the existing segment of Woodward Avenue between the project and McKinley Avenue would become an emergency access.

3.13.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, transportation impacts resulting from the implementation of the proposed project would be considered significant if the project would:

a) Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

c) 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? (Refer to Section 7, Effects Found Not To Be Significant.)

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

e) Result in inadequate emergency access?

f) Conflict with adopted policies, plans or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?

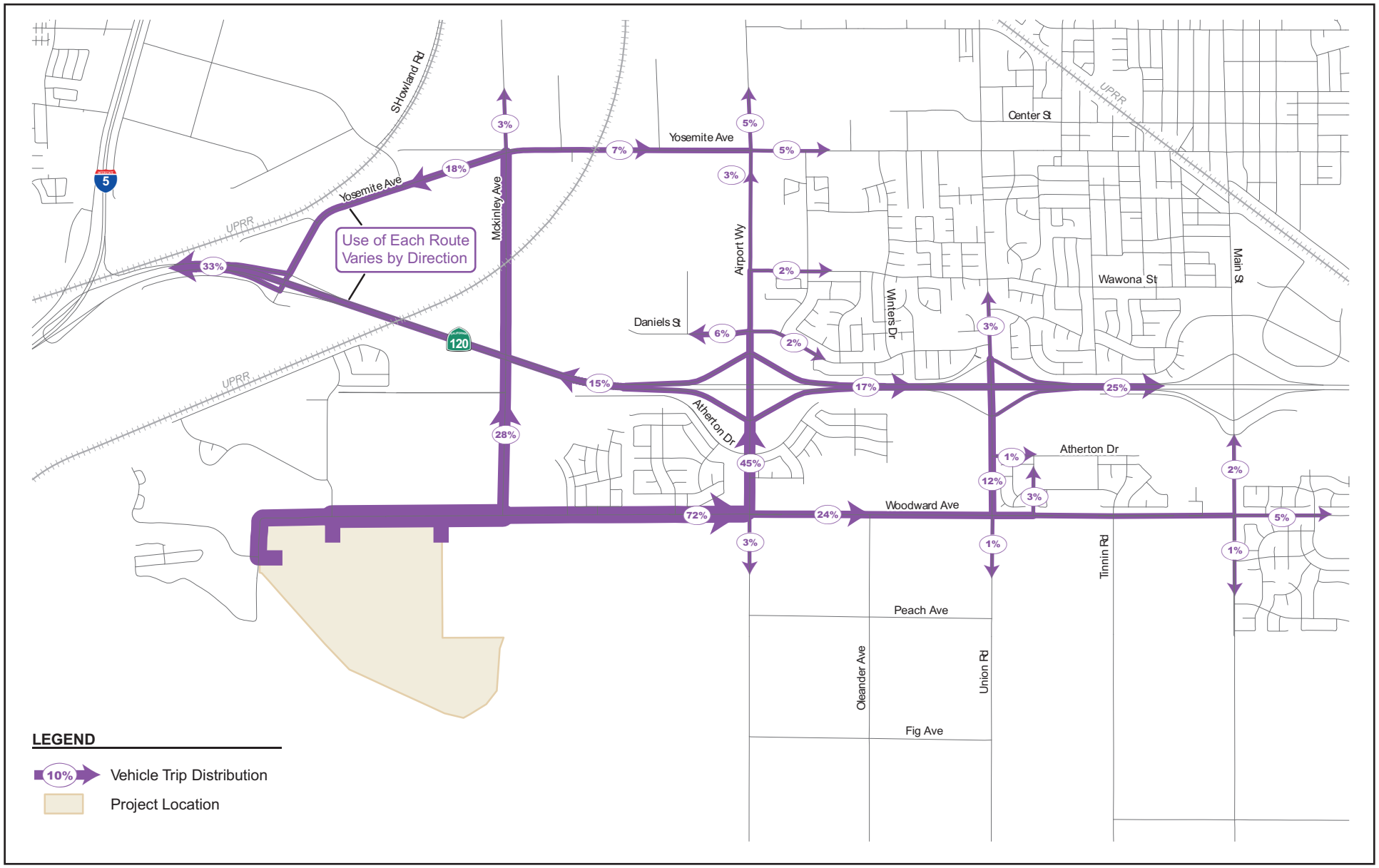
For checklist items a) and b), the following thresholds will be used in this EIR:

Roadway System

The project would cause a significant impact to the roadway system if it would:

Signalized Intersections

- Worsen operations at a signalized intersection in Manteca or on a Caltrans facility from LOS D or better to LOS E or worse.
- Increase the average delay at a signalized intersection in Manteca currently operating (or projected to operate) at LOS E or worse by 3 seconds or more.
- Add traffic to a signalized intersection on a Caltrans facility that is currently operating (or projected to operate) at LOS E or worse.
- Worsen operations at a signalized intersection in Lathrop from LOS C or better to LOS D or worse.
- Increase the average delay at a signalized intersection in Lathrop currently operating (or projected to operate) at LOS D or worse by 5 seconds or more.



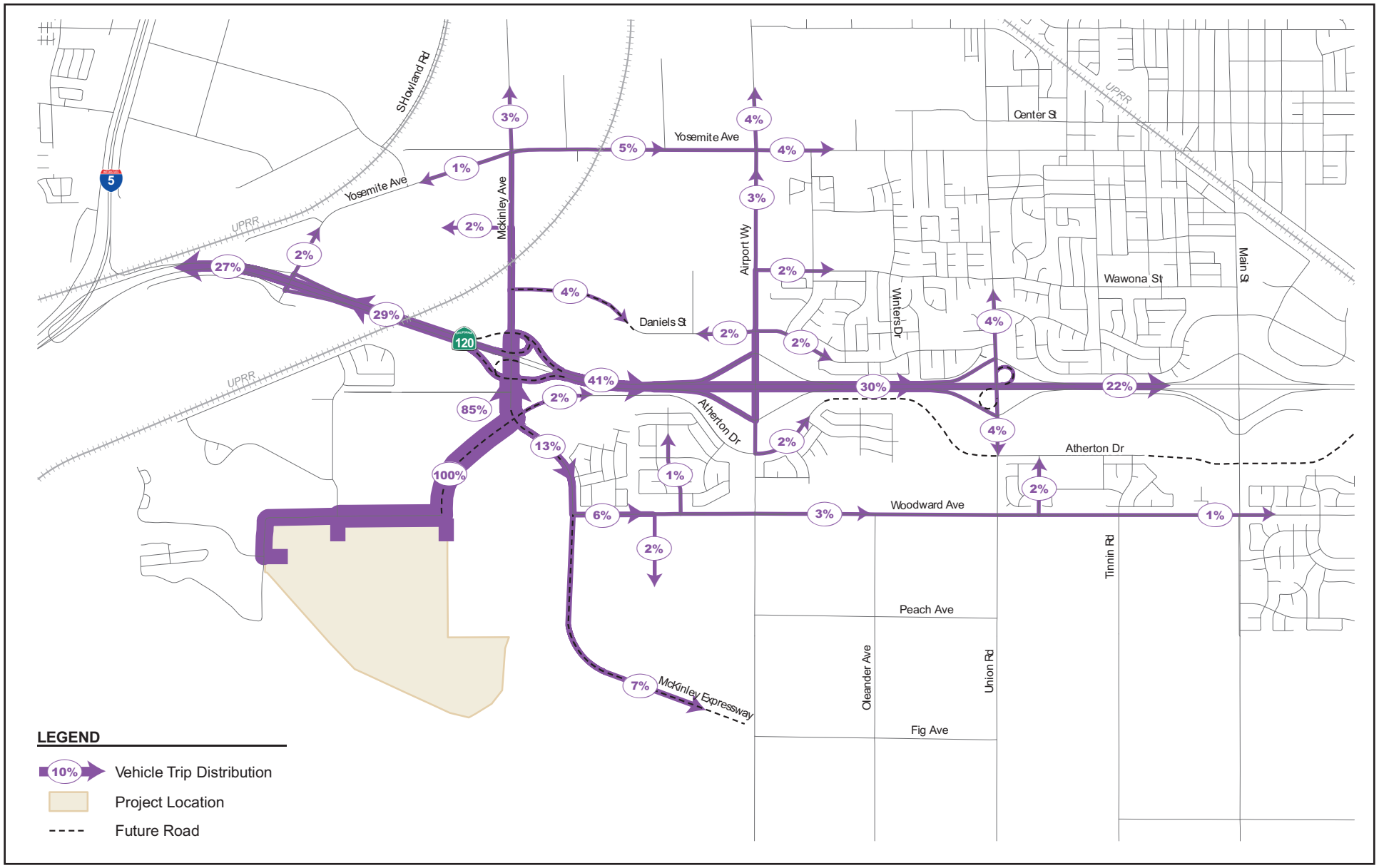
Source: Fehr & Peers Transportation Consultants.

NORTH

Michael Brandman Associates

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Exhibit 3.13-3
Project Trip Distribution - Existing Conditions



Source: Fehr & Peers Transportation Consultants.

NORTH

Michael Brandman Associates

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Exhibit 3.13-4
Project Trip Distribution - Cumulative Conditions

All-Way Stop Intersections

- Worsen operations from LOS D or better to LOS E or F.
- Increase the average delay at an intersection currently operating (or projected to operate) unacceptably by at least 3 seconds if in Manteca or by at least 5 seconds if in Lathrop and cause one of the peak-hour signal warrants to be met.

Side-Street Stop Intersections

- Worsen operations from LOS D or better to LOS E or F.
- Increase the average delay for the highest delayed side-street movement at an intersection in Manteca currently operating (or projected to operate) unacceptably by 3 seconds or more and cause one of the peak-hour signal warrants to be met.

Freeways

- Worsen operations from LOS D or better to LOS E or F.
- Add 100 vehicles per day or more to a freeway segment that is currently operating (or projected to operate) unacceptably.
- Increase traffic by one percent or more at a freeway ramp that is currently operating (or projected to operate) unacceptably.

Roadways

- Worsen a San Joaquin County roadway from LOS C or better to LOS D or worse.
- Increase traffic on a San Joaquin County roadway that is currently operating (or projected to operate) unacceptably.

3.13.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Existing Plus Project Traffic

Impact TRANS-1: The proposed project would generate new vehicle trips that would contribute to unacceptable traffic operations under Existing Plus Project Conditions.

Impact Analysis

This impact evaluates traffic conditions at the opening year of the proposed project. Traffic are presented in two scenarios:

- Existing Plus Trails of Manteca Project
- Existing Plus Trails of Manteca Project, Terra Ranch, and Machado Estates (Pending Projects)

Existing Plus Trails of Manteca Project

The Existing Plus Trails of Manteca Project scenario accounts for existing traffic volumes and the proposed Trails of Manteca Project traffic volumes. No other pending projects are assumed to be in place under this scenario. This scenario serves to isolate project-related traffic impacts.

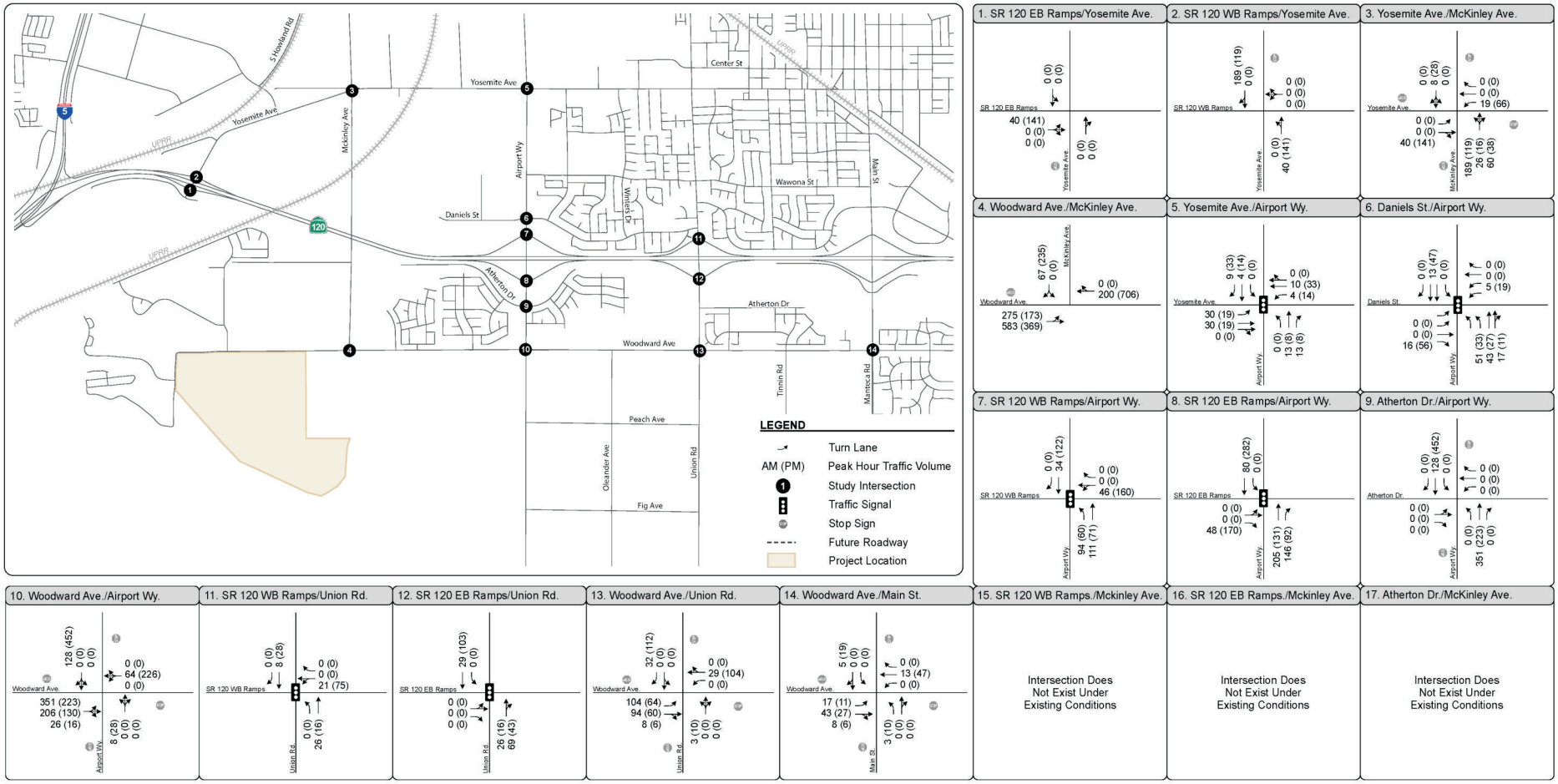
Project trips were assigned to the study facilities in accordance with the trip generation and distribution assumptions described previously. Exhibit 3.13-5 displays project-only trips during the AM and PM peak hours at the study intersections. Project-only trips were then added to the existing volumes to yield "existing plus project" conditions. Exhibit 3.13-6 displays these forecasts at the study intersections.

Table 3.13-8 displays the average daily traffic (ADT) on roadways surrounding the project site under existing plus project conditions. As shown, significant increases in traffic are expected on various segments of Woodward Avenue, Airport Way, and McKinley Avenue.

Table 3.13-8: Average Daily Traffic Volumes – Existing Plus Project Conditions

Roadway		Number of Lanes	Average Daily Traffic (ADT)		
			Existing Conditions	Project Trips	Existing Plus Project Conditions
1	Woodward Avenue – west of McKinley Avenue	2	1,100	14,400	15,500
2	Woodward Avenue – McKinley Avenue to Galleria Drive	2	1,100	10,400	11,500
3	Woodward Avenue – Galleria Drive to Airport Way	2	2,200	10,000	12,600
4	Woodward Avenue – Airport Way to Union Road	2	1,900	3,500	5,400
5	Airport Way – south of Woodward Avenue	2	2,400	400	2,800
5	Airport Way – Woodward Avenue to Atherton Drive	2	4,600	6,500	11,100
6	Airport Way – Atherton Drive to SR-120	2	8,500	6,500	15,000
7	Airport Way – SR-120 to Daniels Street	4	16,400	1,900	18,300
8	McKinley Avenue – Woodward Avenue to Yosemite Avenue	2	900	4,000	4,900

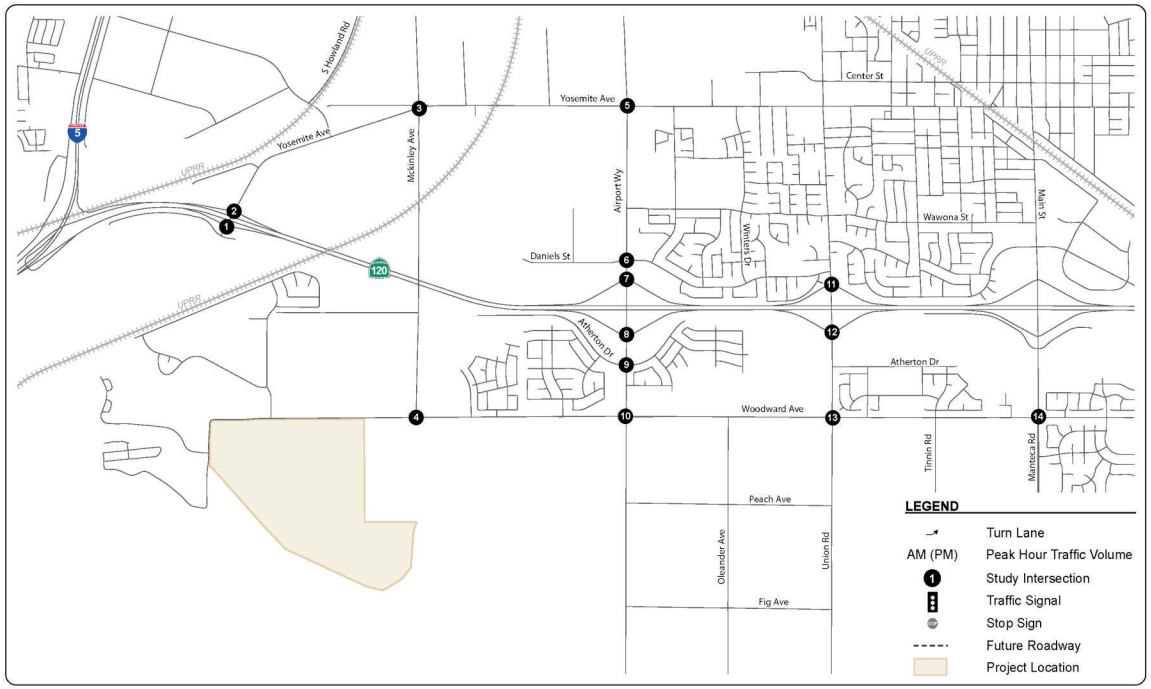
Notes:
Source: Fehr and Peers Transportation Consultants, 2010.

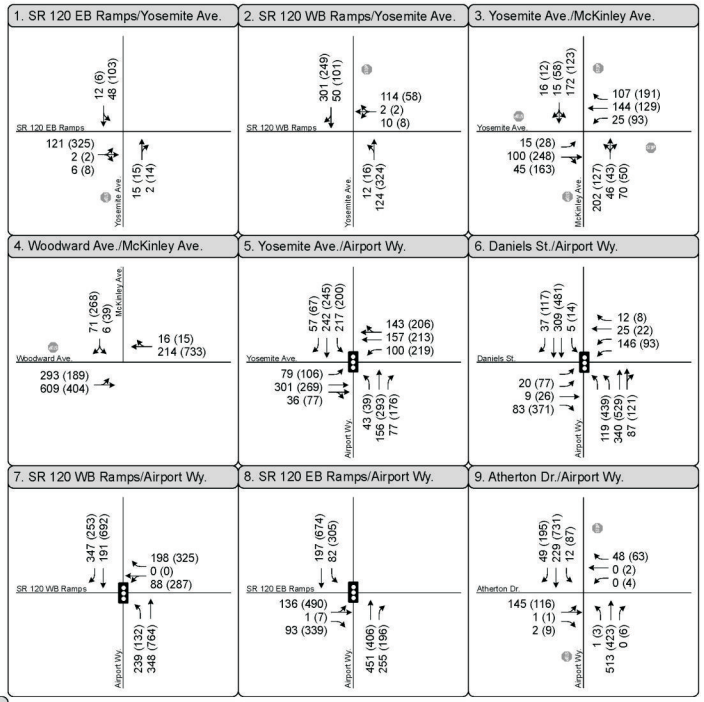


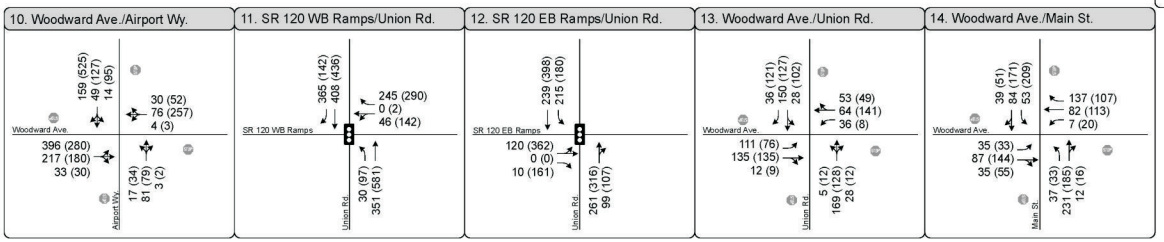
Source: Fehr & Peers Transportation Consultants.

Exhibit 3.13-5
Peak Hour Traffic Volumes and Lane Configurations - Project Only Trips

Michael Brandman Associates







Source: Fehr & Peers Transportation Consultants.

Exhibit 3.13-6
Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

The study intersections were reanalyzed under existing plus project conditions. Table 3.13-9 summarizes the results. According to this table, all study intersections would continue operating at an acceptable level with the exception of the following:

4) Woodward Avenue/McKinley Avenue (LOS F during PM peak hour)
9) Atherton Drive/Airport Way (LOS F during PM peak hour)
10) Woodward Avenue/Airport Way (LOS F during AM and PM peak hours)

The above intersections also satisfy the peak-hour warrant for consideration of a traffic signal.

Table 3.13-9: Peak-Hour Intersection Level of Service – Existing Plus Project Conditions

Intersection		Jurisdiction	Control	Peak Hour	Existing Conditions		Existing Plus Project	
					Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	SR-120 WB Ramps/ Yosemite Avenue	Caltrans	Side Street Stop	AM	10	A	10	B
				PM	13	B	17	C
2	SR-120 EB Ramps/ Yosemite Avenue	Caltrans	Side Street Stop	AM	10	A	10	A
				PM	10	B	12	B
3	Yosemite Avenue/ McKinley Avenue	City of Lathrop	All Way Stop	AM	8	A	12	B
				PM	9	A	17	C
4	Woodward Avenue/ McKinley Avenue	City of Manteca	Side Street Stop	AM	9	A	14	B
				PM	9	A	**>150**	**F**
5	Yosemite Avenue/ Airport Way	City of Manteca	Traffic Signal	AM	32	C	32	C
				PM	35	C	35	C
6	Daniels Street/ Airport Way	City of Manteca	Traffic Signal	AM	15	B	17	B
				PM	24	C	32	C
7	SR-120 WB Ramps/ Airport Way	Caltrans	Traffic Signal	AM	10	B	14	B
				PM	16	B	26	C
8	SR-120 EB Ramps/ Airport Way	Caltrans	Traffic Signal	AM	13	B	11	B
				PM	43	D	46	D
9	Atherton Drive/ Airport Way	City of Manteca	Side Street Stop	AM	9	A	26	D
				PM	20	C	**>150**	**F**
10	Woodward Avenue/ Airport Way	City of Manteca	All Way Stop	AM	8	A	**59**	**F**
				PM	10	B	**>150**	**F**

Table 3.13-9 (cont.): Peak-Hour Intersection Level of Service – Existing Plus Project Conditions

Intersection		Jurisdiction	Control	Peak Hour	Existing Conditions		Existing Plus Project	
					Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
11	SR-120 WB Ramps/ Union Road	Caltrans	Traffic Signal	AM	9	A	9	A
				PM	12	B	13	B
12	SR-120 EB Ramps/ Union Road	Caltrans	Traffic Signal	AM	14	B	14	B
				PM	22	C	24	C
13	Woodward Avenue/ Union Road	City of Manteca	All Way Stop	AM	11	B	14	B
				PM	10	A	12	B
14	Woodward Avenue/ Main Street	City of Manteca	All Way Stop	AM	11	B	12	B
				PM	12	B	13	B

Notes:
Bolded cells represent unacceptable operations.
Source: Fehr and Peers Transportation Consultants, 2010.

Table 3.13-10 displays the operations of study freeway facilities under existing plus project conditions (refer to Appendix B for technical calculations). As shown, the project would exacerbate PM peak-hour LOS E conditions on eastbound SR-120 between I-5 and Yosemite Avenue and at the SR-120 EB off-ramp diverge at Yosemite Avenue and at Airport Way. The project would also degrade the SR-120 EB on-ramp merge from Yosemite Avenue from LOS D to E during the PM peak hour.

Based on the SimTraffic results, the addition of project trips to existing volumes would not cause the vehicles on the eastbound off-ramp at Airport Way to spill onto SR-120 mainline. The off-ramp has approximately 1,700 feet of storage (measured from the limit line to the gore point). The 95th percentile queue was approximately 425 feet. The SimTraffic results also demonstrated that vehicle queuing is not expected to be a problem on the westbound off-ramp.

Table 3.13-10: Peak-Hour Freeway Level of Service – Existing Plus Project Conditions

Facility		Type	Peak Hour	Existing		Existing Plus Project	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
1	SR-120 EB from I-5 to Yosemite Avenue	Mainline	AM	18	B	19	C
			PM	**35**	**E**	**40**	**E**

Table 3.13-10 (cont.): Peak-Hour Freeway Level of Service – Existing Plus Project Conditions

Facility		Type	Peak Hour	Existing		Existing Plus Project	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
2	SR-120 EB from Yosemite Avenue to Airport Way	Mainline	AM	18	B	18	C
			PM	34	D	**36**	**E**
3	SR-120 EB from Airport Way to Union Road	Mainline	AM	18	B	19	C
			PM	31	D	32	D
4	SR-120 EB from Union Road to Main Street	Mainline	AM	19	C	21	C
			PM	28	D	30	D
5	SR-120 EB off-ramp at Yosemite Avenue	Ramp Diverge	AM	21	C	22	C
			PM	**36**	**E**	**40**	**E**
6	SR-120 EB off-ramp at Airport Way	Ramp Diverge	AM	21	C	21	C
			PM	**36**	**E**	**38**	**E**
7	SR-120 EB off-ramp at Union Road	Ramp Diverge	AM	21	C	22	C
			PM	34	D	35	D
8	SR-120 EB on-ramp from Yosemite Avenue	Ramp Merge	AM	20	B	20	C
			PM	34	D	**36**	**E**
9	SR-120 EB on-ramp from Airport Way	Ramp Merge	AM	20	B	21	C
			PM	32	D	33	D
10	SR-120 EB on-ramp from Union Road	Ramp Merge	AM	21	C	23	C
			PM	29	D	31	D
11	SR-120 WB from Main Street to Union Road	Mainline	AM	26	C	26	D
			PM	24	C	27	D
12	SR-120 WB from Union Road to Airport Way	Mainline	AM	27	D	27	D
			PM	23	C	25	C
13	SR-120 WB from Airport Way	Mainline	AM	29	D	30	D
			PM	22	C	23	C
14	SR-120 WB from Yosemite Avenue to I-5	Mainline	AM	29	D	32	D
			PM	23	C	25	C
15	SR-120 WB off-ramp at Union Road	Ramp Diverge	AM	29	D	29	D
			PM	27	C	29	D
16	SR-120 WB off-ramp at Airport Way	Ramp Diverge	AM	30	D	30	D
			PM	26	C	27	C

Table 3.13-10 (cont.): Peak-Hour Freeway Level of Service – Existing Plus Project Conditions

Facility		Type	Peak Hour	Existing		Existing Plus Project	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
17	SR-120 WB off-ramp at Yosemite Avenue	Ramp Diverge	AM	32	D	33	D
			PM	25	C	25	C
18	SR-120 WB on-ramp from Union Road	Ramp Merge	AM	28	D	28	D
			PM	25	C	26	C
19	SR-120 WB on-ramp from Airport Way	Ramp Merge	AM	30	D	31	D
			PM	24	C	24	C
20	SR-120 WB on-ramp from Yosemite Avenue	Ramp Merge	AM	30	D	33	D
			PM	24	C	26	C

Notes:
Bolded cells represent unacceptable operations.
pcpmpl = passenger cars per mile per lane
Source: Fehr and Peers Transportation Consultants, 2010.

The two-lane segment of McKinley Avenue between SR-120 and Yosemite Avenue was analyzed in accordance with San Joaquin County policies. This segment would operate at LOS B during the AM peak hour and LOS C during the PM peak hour with the addition of project traffic.

Existing Plus Pending Projects

The Existing Plus Pending Projects scenario accounts for existing traffic volumes and the proposed traffic volumes associated with The Trails of Manteca Project, Terra Ranch, and Machado Estates. This scenario serves to identify how these three pending projects would impact the surrounding roadway system in the near term.

This analysis focuses on PM peak-hour intersection operations along the Airport Way corridor and daily traffic levels on Airport Way and Woodward Avenue. Trips associated with all three projects were added to existing volumes, based on the trip distribution percentages developed for each project. Table 3.13-11 shows the resulting daily volumes. Table 3.13-12 displays the resulting peak-hour intersections operations. As noted in this table, traffic signals have been assumed at the Airport Way/Atherton Drive and Airport Way/Woodward Avenue intersections.

Table 3.13-11: Average Daily Traffic Volumes – Existing Plus Project Conditions[1]

Roadway		Number of Lanes	Average Daily Traffic (ADT)		
			Existing Conditions	Existing Plus 50% Buildout[2]	Existing Plus 100 % Buildout[3]
1	Woodward Avenue – west of Airport Way	2	2,200	10,200	18,200
2	Airport Way – Woodward Avenue to Atherton Drive	2	4,600	10,900	17,200
3	Airport Way – Atherton Drive to SR-120	2	8,500	14,800	21,100

Notes:
[1] Pending projects include Terra Ranch, Machado Estates, and Trails.
[2] 50% Buildout scenario assumes 50% of total project trips from Terra Ranch, Machado Estates, and Trails.
[3] 100% Buildout scenario assumes the complete buildout of Terra Ranch, Machado Estates, and Trails.
Source: Fehr and Peers Transportation Consultants, 2010.

Table 3.13-12: Peak-Hour Intersection Level of Service – Existing Plus Project Conditions[1]

Intersection		Jurisdiction	Control	Existing Conditions		Existing Plus 50% Build Out[2]		Existing Plus 100% Build Out[3]	
				Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
3	Daniels Street/ Airport Way	City of Manteca	Traffic Signal	24	C	28	C	**95**	**F**
4	SR-120 WB Ramps/ Airport Way	Caltrans	Traffic Signal	16	B	28	C	**82**	**F**
5	SR-120 EB Ramps/ Airport Way	Caltrans	Traffic Signal	43	D	54	D	**87**	**F**
6	Atherton Drive/ Airport Way	City of Manteca	Traffic Signal[4]	20	C	15	B	23	C
7	Woodward Avenue/ Airport Way	City of Manteca	Traffic Signal[5]	10	B	21	C	39	D

Notes:
[1] Pending projects include Terra Ranch, Machado Estates, and Trails.
[2] 50% Buildout scenario assumes 50% of total project trips from Terra Ranch, Machado Estates, and Trails.
[3] 100% Buildout scenario assumes the complete buildout of Terra Ranch, Machado Estates, and Trails.
[4] Atherton Drive/Airport Way intersection has side-street stop control under Existing Conditions.
[5] Woodward Avenue/Airport Way intersection has all-way stop control under Existing Conditions.
Bolded cells represent unacceptable operations.
Source: Fehr and Peers Transportation Consultants, 2010.

Table 3.13-12 indicates that 100 percent buildout of all three pending projects would result in LOS F operations at the SR-120/Airport Way ramp intersections and Airport Way/Daniels Street intersection. Through an iterative process, it was determined that approximately 50 percent of

buildout of all three pending projects would result in operations that remain at LOS D or better (see Table 3.13-12).

Fifty percent buildout of the three pending projects would correspond to 1,317 dwelling units. Thus, it could be inferred from this analysis that operations at the SR-120/Airport Way interchange would degrade to unacceptable levels with construction of 1,300 or more units[1]. During years with above-average residential growth, Manteca issued an average of 500 residential building permits per year. Assuming the 500-unit per year absorption rate and a conservative assumption that 33 percent of all constructed units are located in southwest Manteca (within the three pending projects), then it would take approximately 8 years to construct 1,300 units in this area. If construction begins in 2011, then 1,300 units would be constructed in this area by 2019–2020. As mentioned previously, the SR-120/ McKinley Avenue interchange is expected to be open to traffic in 2020. Thus, the timing of an important new infrastructure improvement appears to be well coordinated with anticipated residential absorption, which will eventually trigger the need for congestion relief at the SR-120/Airport Way interchange.

Impacts and Mitigation Measures

Below are descriptions of impacts and mitigation measures.

Intersections

As previously shown in Table 3.13-9, the proposed project would cause the following significant impacts to study intersections:

4) Woodward Avenue/McKinley Avenue (LOS A to F during PM peak hour)
9) Atherton Drive/Airport Way (LOS C to F during PM peak hour)
10) Woodward Avenue/Airport Way (LOS A to F during AM peak hour and LOS B to F during PM peak hour)

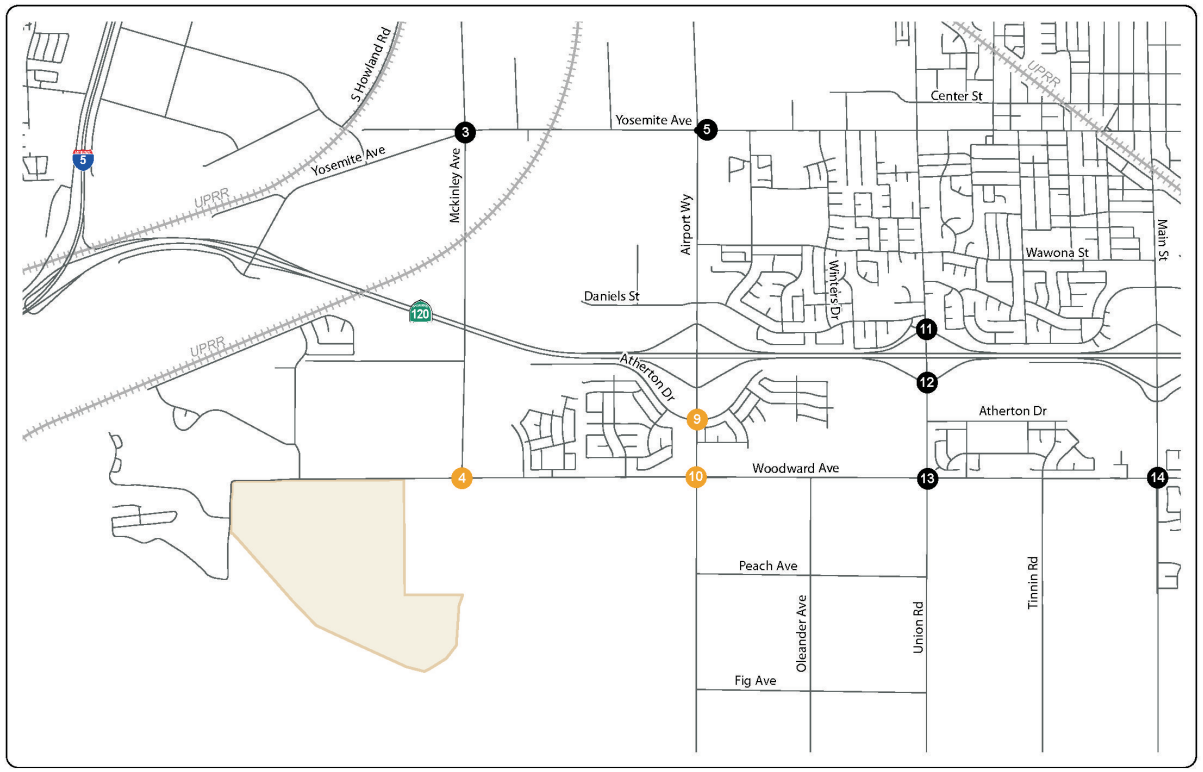
This impact is considered a potentially significant impact.

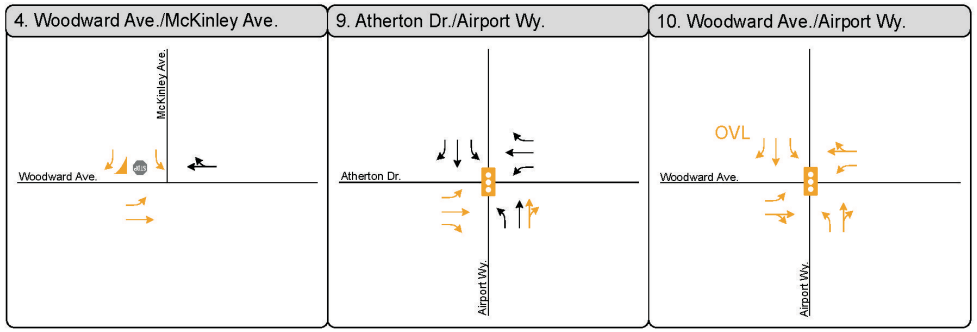
To mitigate this impact, the following improvements, which are shown on Exhibit 3.13-7, would restore operations to an acceptable level at each intersection:

Woodward Avenue/McKinley Avenue

- Widen intersection to include a two-way left-turn lane on Woodward Avenue to accommodate eastbound and southbound left-turn movements. Construct channelized southbound right-turn lane with 250-foot receiving lane on westbound Woodward Avenue. With these improvements in place, operations would be restored to LOS C during the AM and PM peak hours; or

[1] Construction of non-residential uses on the north side of the interchange could cause interchange operations to degrade sooner. However, the timing of those developments is uncertain.





LEGEND

- Mitigated Intersection
- Mitigation Measure
- Study Intersection, No Mitigation Needed
- Future Roadway
- OVL — Right-Turn Overlap Arrow
- Turn Lane
- Traffic Signal
- Stop Sign
- Channelized Right Turn
- Project Location

Notes:
1. Project specific mitigation at intersection 4 is the project's responsibility.
2. Project-specific mitigation at intersections 9 and 10 may consist either of applicant payment of PFIP fee and/or construction of required improvements by applicant.

Source: Fehr & Peers Transportation Consultants.

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Exhibit 3.13-7
Project-Specific Intersection Mitigations

- Construct Atherton Drive extension to Woodward Avenue prior to operations at the Woodward Avenue/McKinley Avenue intersection degrading to an unacceptable level. Operations are projected to degrade to unacceptable at approximately 70 percent of project buildout This new road construction would divert all trips away from the Woodward Avenue/McKinley Avenue intersection, thereby no longer requiring the need for any improvements. If the City decides this improvement will be warranted because of uncertainties regarding the timing of the Atherton Drive extension, it would become the applicant's responsibility.

Atherton Drive/Airport Way

- Install traffic signal and restripe northbound approach to include one left-turn lane, one through lane, and one shared through/right lane. Restripe northbound Airport Way north of Atherton Drive to include a second travel lane to the SR-120 eastbound ramps intersection. With this improvement in place, operations would be restored to LOS A during the AM peak hour and LOS B during the PM peak hour.

Woodward Avenue/Airport Way

- Install traffic signal and widen intersection to include exclusive left-turn lane and shared through/right lane on eastbound, westbound, and northbound approaches. Widen southbound approach to include exclusive left, through, and right-turn lanes and operate right-turn lane with overlap arrow. With this improvement in place, operations would be restored to LOS B during the AM peak hour and LOS C during the PM peak hour.

Improvements at the Atherton Drive/Airport Way and Woodward Avenue/Airport Way intersections are included in the City's PFIP. Project mitigation may take the form of payment of the applicable PFIP fee with required improvements to be constructed by the City when warranted. Alternatively, the project applicant may be asked to construct these or other equally effective improvements and receive credit toward PFIP fees. Payment of PFIP fees is reflected in Mitigation Measure TRANS-1a and construction of necessary improvements (in lieu of payment of PFIP fees) is reflected in Mitigation Measure TRANS-1b. Implementation of this mitigation measure would reduce the above impact to a level of less than significant.

Freeway Facilities

As previously shown in Table 3.13-10, the proposed project would cause the following significant impacts to freeway facilities during the PM peak hour:

- EB SR-120 between I-5 and Yosemite Avenue (LOS E exacerbated)
- EB SR-120 between Yosemite Avenue and Airport Way (LOS D to E)
- EB SR-120 off-ramp diverge at Yosemite Avenue (LOS E exacerbated)
- Eastbound SR-120 off-ramp diverge at Airport Way (LOS E exacerbated)
- EB SR-120 on-ramp merge from Yosemite Avenue (LOS D to E)

This impact is considered a potentially significant impact.

To mitigate this impact, the project applicant shall pay the appropriate San Joaquin County Regional Traffic Impact Fee (RTIF), which is collecting fees from new developments to help fund the widening of SR-120 to six lanes.

The widening of SR-120 to six lanes would improve operations at each impacted location to an acceptable level. Implementation of this mitigation measure would reduce the significance of the impact. Payment of the RTIF is reflected in Mitigation Measure TRANS-1a. However, the impact would remain significant and unavoidable because this improvement is within the jurisdiction of Caltrans, and there are no assurances that it would be constructed within a reasonable period of time.

Conclusion

The proposed project would contribute to unacceptable intersection and freeway operations under Existing Plus Project Conditions. Necessary improvements to improve operations to acceptable levels are identified in the City of Manteca's PFIP and the RTP. However, in the latter case, the City cannot assure that necessary improvements would be implemented because the affected facility (SR-120) is under the jurisdiction of another agency. Therefore, the residual significance is significant and unavoidable.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-1a Prior to issuance of building permits for each Master Plan use, the applicant shall pay all transportation-related fees in accordance with the latest adopted fee schedule at the time permits are sought. Such fees shall include but would not be limited to the City of Manteca Public Facilities Implementation Plan fee and the San Joaquin County Regional Transportation Impact Fee.

MM TRANS-1b The project applicant shall construct one or more of the following improvements when determined to be necessary by the City of Manteca. The applicant shall be credited for the cost of the improvements(s) against its Public Facilities Implementation Plan fee amount.

- *Woodward Avenue/McKinley Avenue*: Implement one of the following improvement options:
  - Widen intersection to include a two-way left-turn lane on Woodward Avenue to accommodate eastbound and southbound left-turn movements. Construct channelized southbound right-turn lane with 250-foot receiving lane on westbound Woodward Avenue. With these improvements in place,

operations would be restored to LOS C during the AM and PM peak hours; or

- Construct Atherton Drive extension to Woodward Avenue prior to operations at the Woodward Avenue/McKinley Avenue intersection degrading to an unacceptable level. Operations are projected to degrade to unacceptable at approximately 70 percent of project buildout This new road construction would divert all trips away from the Woodward Avenue/McKinley Avenue intersection, thereby no longer requiring the need for any improvements. If the City decides this improvement will be warranted because of uncertainties regarding the timing of the Atherton Drive extension, it would become the applicant's responsibility.

- *Atherton Drive/Airport Way*: Install traffic signal and restripe northbound approach to include one left-turn lane, one through lane, and one shared through/right lane. Restripe northbound Airport Way north of Atherton Drive to include a second travel lane to the SR-120 eastbound ramps intersection. With this improvement in place, operations would be restored to LOS A during the AM peak hour and LOS B during the PM peak hour.
- *Woodward Avenue/Airport Way*: Install traffic signal and widen intersection to include exclusive left-turn lane and shared through/right lane on eastbound, westbound, and northbound approaches. Widen southbound approach to include exclusive left, through, and right-turn lanes and operate right-turn lane with overlap arrow. With this improvement in place, operations would be restored to LOS B during the AM peak hour and LOS C during the PM peak hour.

Level of Significance After Mitigation

Significant unavoidable impact.

Cumulative Conditions Traffic

Impact TRANS-2: The proposed project would generate new vehicle trips that would contribute to unacceptable traffic operations under Cumulative Conditions.

Impact Analysis

This impact evaluates traffic conditions under cumulative conditions.

Cumulative No Project Traffic Forecasts

Cumulative no project traffic forecasts were developed using the SJCOG travel demand model. The model was modified to reflect the following reasonable and foreseeable land uses in the project vicinity:

- Lathrop Gateway Business Park – situated north of SR-120 between Yosemite Avenue and McKinley Avenue, which could yield a maximum of 5.43 million square feet of non-residential according to that project's EIR
- Machado Estates – 575 dwelling units located south of Woodward Avenue and west of Airport Way
- Terra Ranch – 409 dwelling units located directly west of Machado Estates
- Oakwood Shores – 475 dwelling units located on Oakwood Lake that have two accesses onto Woodward Avenue west of McKinley Avenue

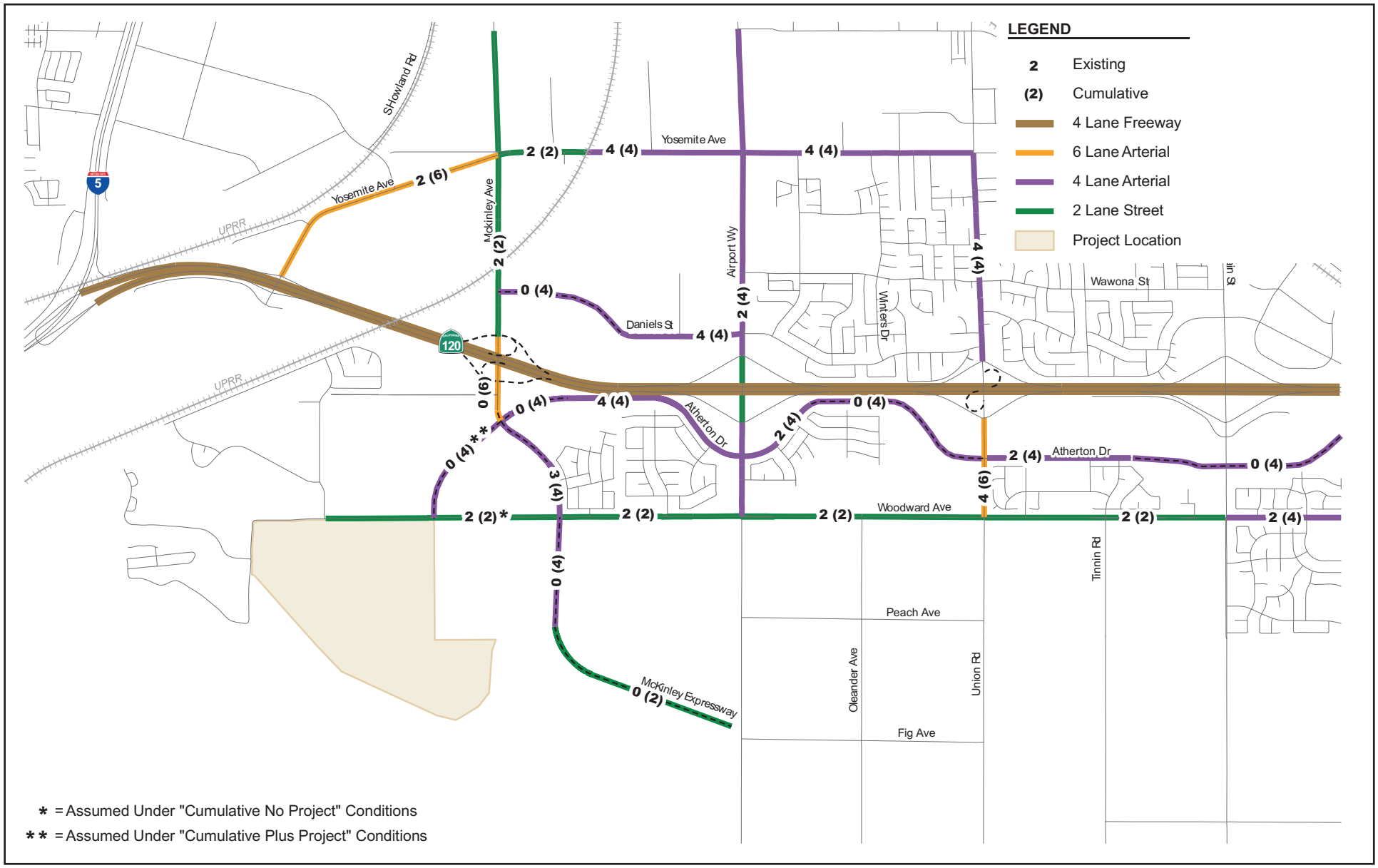
In addition to the above, a number of other land uses were assumed, including new retail centers along Atherton Drive near Airport Way, the Northwest Airport Way Master Plan, and the Austin Road Business Park and Residential Community. It should be noted that the Tara Park project (located between the Trails and Terra Ranch projects to the north and south of Woodward Avenue) was not assumed in place, since an application for this property is not being processed.

Planned roadway improvements in the study area include the following, which are shown on Exhibit 3.13-8:

- SR-120/McKinley Avenue interchange – partial cloverleaf design with lane configurations similar to those in the 2007 Project Study Report
- McKinley Avenue Expressway – extends southerly from SR-120 as four lanes along the western boundary of Terra Ranch and then easterly to SR-99 as two to four lanes
- Airport Way Widening – widened to four lanes between Yosemite Avenue and Woodward Avenue (with exception of SR-120 overcrossing)
- Yosemite Avenue Widening – widened to six lanes along the frontage of the Lathrop Gateway Business Park, based on the EIR including this widening as mitigation for its impacts

The City's PFIP includes the southwesterly extension of Atherton Drive as a four-lane roadway from the McKinley Avenue Expressway to Woodward Avenue near the eastern Trails project boundary. When this new roadway is constructed, Woodward Avenue between the McKinley Avenue Expressway and Atherton Drive extension either would become an emergency vehicle access or would be demolished.

Under cumulative no project conditions, the existing two-lane segment of the Woodward Avenue is assumed to remain in place. This is a reasonable assumption because this scenario would not anticipate any development within the City west of the McKinley Avenue Expressway. As such, the City would not likely spend PFIP funds on an unneeded road improvement.



Source: Fehr & Peers Transportation Consultants.

NORTH

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Exhibit 3.13-8
Cumulative Roadway System

Under cumulative plus project conditions, the 0.5-mile southwesterly extension of Atherton Drive as a four-lane roadway from the McKinley Expressway to Woodward Avenue is assumed in place. This is a reasonable assumption because this scenario includes development of the Trails, which will require greater roadway capacity than is provided by Woodward Avenue. Furthermore, development impact fees from the Trails would be used to contribute to the Atherton Drive Extension. This scenario assumes that the approximate 0.5-mile segment of Woodward Avenue between the project site and McKinley Expressway is converted to an emergency access only.

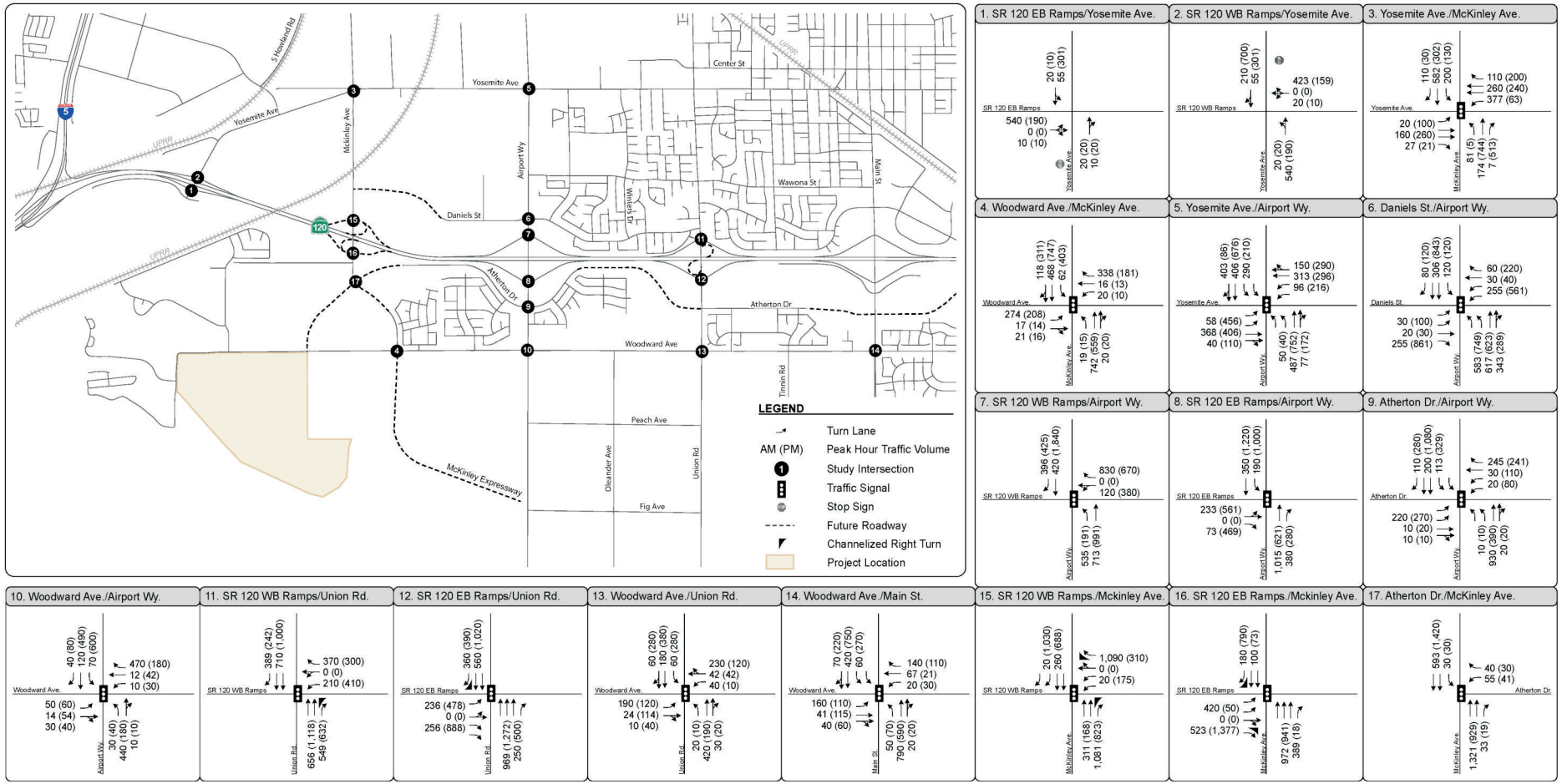
The City's planned circulation system also includes the continued extension of Atherton Drive southerly and then easterly to reconnect with McKinley Avenue Expressway. This southerly connection was not assumed in place, because it is not required for The Trails and would pass through the Tara Park property, which is not assumed to be developed under this scenario.

A number of other improvements are also assumed including the extensions of Atherton Drive and Daniels Street, and widening of Union Road. Improvements were not assumed at the SR-120/ Yosemite Avenue and SR-120/Airport Way interchanges because they are shown as Tier II (unfunded) improvements in the 2011 Draft RTP. SR-120 was assumed to remain a four-lane freeway, because the timeframe for widening to six lanes is 2027, according to the 2011 Draft RTP, which is beyond the Manteca General Plan horizon year.

Exhibit 3.13-9 displays the cumulative no project peak-hour traffic forecasts at the study intersections. Table 3.13-11 displays the cumulative no project average daily traffic volumes in the project vicinity. These forecasts assume no development on the project site.

The new SR-120/McKinley Avenue interchange ramp intersections and the Atherton Drive/McKinley Avenue Expressway intersection were added as study facilities. Traffic signals were assumed at the Airport Way/Atherton Road and Airport Way/Woodward Avenue intersections as they are planned City improvements and pending land developments in the area will trigger their installation.

Project trips were added to the cumulative no project forecasts to yield the cumulative plus project peak-hour intersection forecasts shown on Exhibit 3.13-10 and the daily forecasts shown in Table 3.13-13.

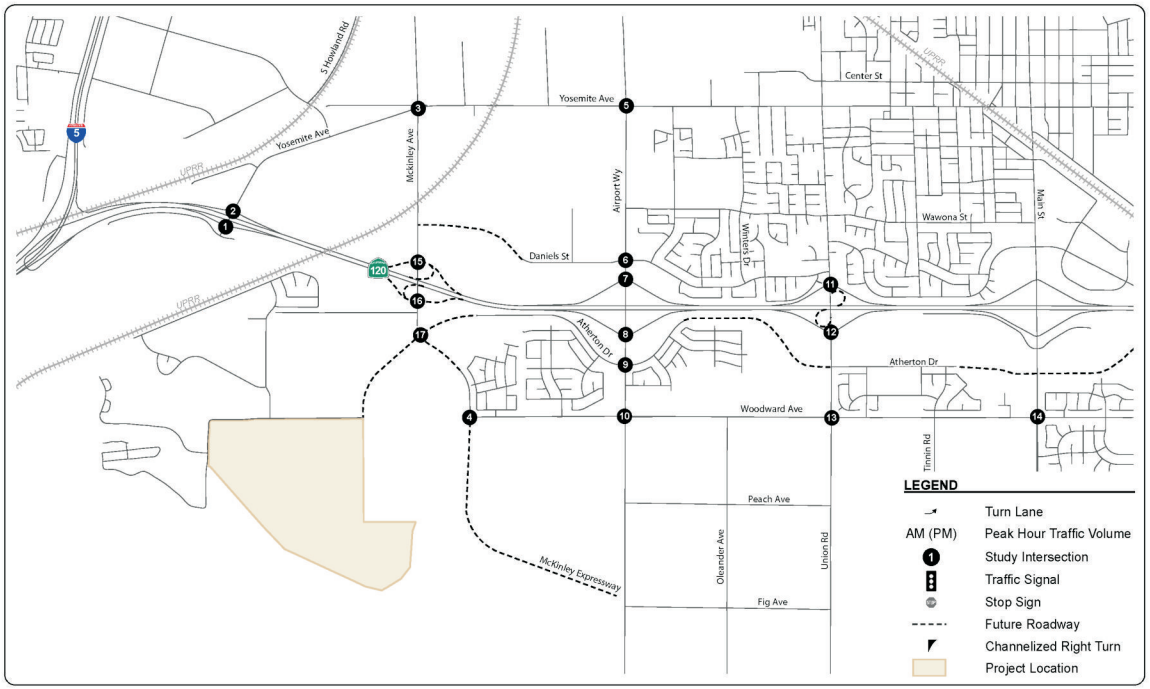


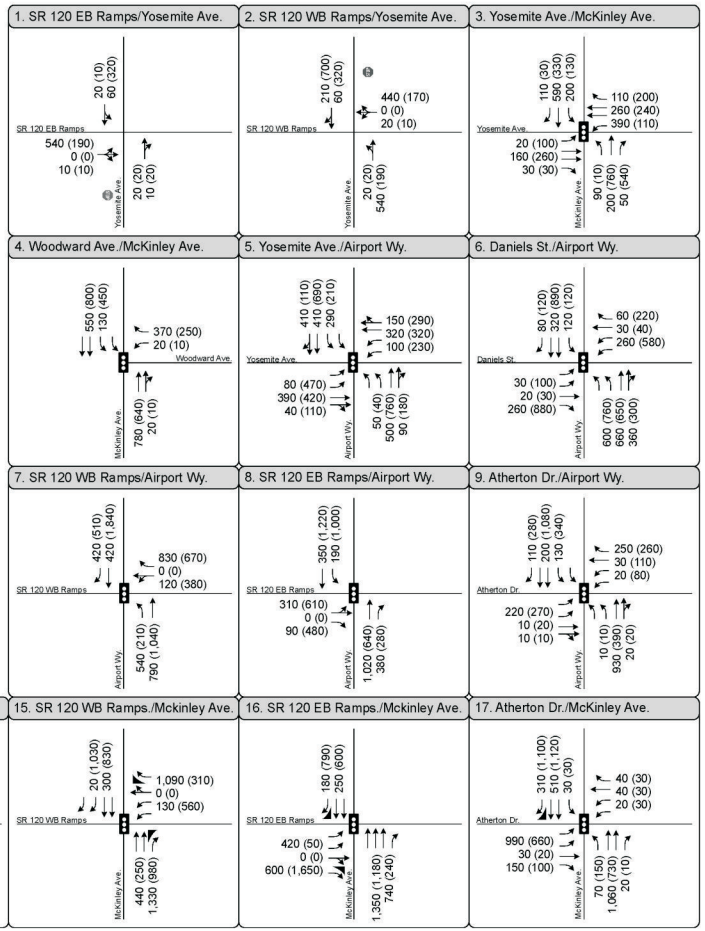
Source: Fehr & Peers Transportation Consultants.

Exhibit 3.13-9
Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

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Michael Brandman Associates





Source: Fehr & Peers Transportation Consultants.

Exhibit 3.13-10
Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

NORTH

Michael Brandman Associates

Table 3.13-13: Average Daily Traffic Volumes – Cumulative Conditions

Roadway		Number of Lanes	Average Daily Traffic (ADT)		
			Cumulative No Project Conditions	Project Trips	Cumulative Plus Project Conditions
1	Atherton Drive – west of McKinley Avenue Expressway	2/4[1]	5,500	14,400	19,900
2	Atherton Drive – east of McKinley Avenue Expressway	4	1,500	300	1,800
3	McKinley Avenue Expressway – SR-120 to Atherton Drive	4	20,700	12,300	33,000
4	McKinley Avenue Expressway – Atherton Drive to Woodward Avenue	4	16,800	1,900	18,700
5	McKinley Avenue Expressway – south of Woodward Avenue	4	12,000	1,000	13,000
6	Woodward Avenue – east of McKinley Avenue Expressway	2	5,700	900	6,600

Notes:
[1] Remains as existing two-lane segment of Woodward Avenue under "No Project" conditions; is reconstructed as four-lane segment called Atherton Drive under "Plus Project" conditions.
Source: Fehr and Peers Transportation Consultants, 2010.

Intersection Operations

The study intersections were analyzed under cumulative conditions, without and with the proposed project. Table 3.13-14 summarizes the results. According to this table, the SR-120/Airport Way ramp intersections would operate at LOS F during both peak hours without or with the proposed project. Vehicle queues from these intersections would cause operations at the Airport Way/Daniels Street and Airport Way/Atherton Drive intersections to also operate at LOS F during one or both peak hours. In addition, LOS E or F operations would result at the SR-120/Airport Way ramps and Yosemite Avenue/McKinley Avenue intersections.

Table 3.13-14: Peak-Hour Intersection Level of Service – Cumulative Conditions

Intersection		Jurisdiction	Control	Peak Hour	Cumulative No Project		Cumulative Plus Project	
					Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	SR-120 WB Ramps/ Yosemite Avenue	Caltrans	Side Street Stop	AM	21	C	22	C
				PM	33	D	**38**	**E**
2	SR-120 EB Ramps/ Yosemite Avenue	Caltrans	Side Street Stop	AM	**46**	**E**	**52**	**F**
				PM	11	B	12	B

Table 3.13-14 (cont.): Peak-Hour Intersection Level of Service – Cumulative Conditions

Intersection		Jurisdiction	Control	Peak Hour	Cumulative No Project		Cumulative Plus Project	
					Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
3	Yosemite Avenue/ McKinley Avenue	City of Lathrop	Traffic Signal	AM	**36**	**D**	**38**	**D**
				PM	28	C	29	C
4	Woodward Avenue/ McKinley Avenue	City of Manteca	Traffic Signal	AM	26	C	11	B
				PM	22	C	11	B
5	Yosemite Avenue/Airport Way	City of Manteca	Traffic Signal	AM	25	C	25	C
				PM	33	C	34	C
6	Daniels Street/ Airport Way	City of Manteca	Traffic Signal	AM	40	D	32	C
				PM	**>150**	**F**	**>150**	**F**
7	SR-120 WB Ramps/ Airport Way	Caltrans	Traffic Signal	AM	**128**	**F**	**109**	**F**
				PM	**>150**	**F**	**>150**	**F**
8	SR-120 EB Ramps/ Airport Way	Caltrans	Traffic Signal	AM	**78**	**E**	**104**	**F**
				PM	**>150**	**F**	**>150**	**F**
9	Atherton Drive/ Airport Way	City of Manteca	Traffic Signal	AM	**>150**	**F**	**>150**	**F**
				PM	40	D	48	D
10	Woodward Avenue/ Airport Way	City of Manteca	Traffic Signal[1]	AM	23	C	22	C
				PM	25	C	25	C
11	SR-120 WB Ramps/ Union Road	Caltrans	Traffic Signal	AM	7	A	7	A
				PM	8	A	8	A
12	SR-120 EB Ramps/ Union Road	Caltrans	Traffic Signal	AM	6	A	6	A
				PM	12	B	12	B
13	Woodward Avenue/ Union Road	City of Manteca	Traffic Signal[2]	AM	22	C	22	C
				PM	21	C	21	C
14	Woodward Avenue/ Main Street	City of Manteca	Traffic Signal[1]	AM	21	C	21	C
				PM	20	C	20	C
15	SR-120 WB Ramps/ McKinley Avenue	Caltrans	Traffic Signal	AM	10	A	12	B
				PM	16	B	15	B
16	SR-120 EB Ramps/ McKinley Avenue	Caltrans	Traffic Signal	AM	9	A	10	A
				PM	10	B	29	C
17	Atherton Drive/ McKinley Avenue Expressway	City of Manteca	Traffic Signal	AM	8	A	42	D
				PM	5	A	24	C

Table 3.13-14 (cont.): Peak-Hour Intersection Level of Service – Cumulative Conditions

Intersection	Jurisdiction	Control	Peak Hour	Cumulative No Project		Cumulative Plus Project	
				Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS

Notes:
[1] Operations would also be at LOS C or better if a two-lane roundabout were installed.
[2] Operations would also be at LOS C or better if a single-lane roundabout were installed.
Bolded cells represent unacceptable operations.
Source: Fehr and Peers Transportation Consultants, 2010.

Freeway Operations

The study freeway facilities (including merge/diverge movements at new SR-120/McKinley Avenue interchange) were analyzed under cumulative conditions, without and with the proposed project. Table 3.13-15 summarizes the results (refer to Appendix C for technical calculations). According to this table, all 30 study segments/ramps on SR-120 would operate at an unacceptable LOS E or F under cumulative conditions without or with the proposed project. This is to be expected, since the widening of SR-120 is known to be a needed improvement, but was not assumed under cumulative conditions because its construction date is beyond the Manteca General Plan horizon year.

Table 3.13-15: Peak-Hour Freeway Level of Service – Cumulative Conditions

Facility		Type	Peak Hour	Cumulative No Project		Cumulative Plus Project	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
1	SR-120 EB from I-5 to Yosemite Avenue	Mainline	AM	**36**	**E**	**39**	**E**
			PM	-	**F**	-	**F**
2	SR-120 EB from Yosemite Avenue to McKinley Avenue	Mainline	AM	30	D	33	D
			PM	-	**F**	-	**F**
3	SR-120 EB from McKinley Avenue to Airport Way	Mainline	AM	27	D	32	D
			PM	-	**F**	-	**F**
4	SR-120 EB from Airport Way to Union Road	Mainline	AM	29	D	34	D
			PM	-	**F**	-	**F**
5	SR-120 EB from Union Road to Main Street	Mainline	AM	30	D	34	D
			PM	-	**F**	-	**F**
6	SR-120 EB off-ramp at Yosemite Avenue	Ramp Diverge	AM	**37**	**E**	**40**	**E**
			PM	-	**F**	-	**F**

Table 3.13-15 (cont.): Peak-Hour Freeway Level of Service – Cumulative Conditions

Facility		Type	Peak Hour	Cumulative No Project		Cumulative Plus Project	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
7	SR-120 EB off-ramp at McKinley Avenue	Ramp Diverge	AM	**33**	**D**	**35**	**E**
			PM	-	**F**	-	**F**
8	SR-120 EB off-ramp at Airport Way	Ramp Diverge	AM	30	D	34	D
			PM	-	**F**	-	**F**
9	SR-120 EB off-ramp at Union Road	Ramp Diverge	AM	**32**	**D**	**36**	**E**
			PM	-	**F**	-	**F**
10	SR-120 EB on-ramp from Yosemite Avenue	Ramp Merge	AM	31	D	33	D
			PM	-	**F**	-	**F**
11	SR-120 EB loop on-ramp from McKinley Avenue	Ramp Merge	AM	25	C	27	C
			PM	-	**F**	-	**F**
12	SR-120 EB on-ramp from Airport Way	Ramp Merge	AM	28	C	32	D
			PM	-	**F**	-	**F**
13	SR-120 EB on-ramp from Airport Way	Ramp Merge	AM	30	D	33	D
			PM	-	**F**	-	**F**
14	SR-120 EB loop on-ramp from Union Road	Ramp Merge	AM	30	D	33	D
			PM	**37**	**E**	**39**	**E**
15	SR-120 EB on-ramp from Union Road	Ramp Merge	AM	31	D	34	D
			PM	-	**F**	-	**F**
16	SR-120 WB from Main Street to Union Road	Mainline	AM	**41**	**E**	**44**	**E**
			PM	-	**F**	-	**F**
17	SR-120 WB from Union Road to Airport Way	Mainline	AM	-	**F**	-	**F**
			PM	-	**F**	-	**F**
18	SR-120 WB from Airport Way to McKinley Avenue	Mainline	AM	-	**F**	-	**F**
			PM	**41**	**E**	-	**F**
19	SR-120 WB from McKinley Avenue to Yosemite Avenue	Mainline	AM	-	**F**	-	**F**
			PM	-	**F**	-	**F**
20	SR-120WB from Yosemite Avenue to I-5	Mainline	AM	**44**	**E**	-	**F**
			PM	-	**F**	-	**F**
21	SR-120 WB off-ramp at Union Road	Ramp Diverge	AM	**41**	**E**	-	**F**
			PM	-	**F**	-	**F**

Table 3.13-15 (cont.): Peak-Hour Freeway Level of Service – Cumulative Conditions

Facility		Type	Peak Hour	Cumulative No Project		Cumulative Plus Project	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
22	SR-120 WB off-ramp at Airport Way	Ramp Diverge	AM	-	**F**	-	**F**
			PM	-	**F**	-	**F**
23	SR-120 WB off-ramp at McKinley Avenue	Ramp Diverge	AM	-	**F**	-	**F**
			PM	**40**	**E**	-	**F**
24	SR-120 WB off-ramp at Yosemite Avenue	Ramp Diverge	AM	-	**F**	-	**F**
			PM	-	**F**	-	**F**
25	SR-120 WB loop on-ramp from Union Road	Ramp Merge	AM	**38**	**E**	**39**	**E**
			PM	**40**	**E**	-	**F**
26	SR-120 WB on-ramp from Union Road	Ramp Merge	AM	-	**F**	-	**F**
			PM	-	**F**	-	**F**
27	SR-120 WB on-ramp from Airport Way	Ramp Merge	AM	-	**F**	-	**F**
			PM	**37**	**E**	-	**F**
28	SR-120 WB loop on-ramp from McKinley Avenue	Ramp Merge	AM	-	**F**	-	**F**
			PM	-	**F**	-	**F**
29	SR-120 WB on-ramp from McKinley Avenue	Ramp Merge	AM	-	**F**	-	**F**
			PM	-	**F**	-	**F**
30	SR-120 WB on-ramp from Yosemite Avenue	Ramp Merge	AM	**39**	**E**	-	**F**
			PM	-	**F**	-	**F**

Notes:
Bolded cells represents unacceptable operations.
pcpmpl = passenger cars per mile per lane
Source: Fehr and Peers Transportation Consultants, 2010.

Congestion Management Plan Roadway Segments

Regional roadways in San Joaquin County are monitored as part of the Regional Congestion Management Program (RCMP) implemented by SJCOG. Within the study area, Airport Way (north of SR-120) and SR-120 are designated as CMP facilities. Additionally, SJCOG has indicated that planned arterials and expressways should also be included in the CMP analysis. Accordingly, the McKinley Avenue Expressway (segments south of SR-120) is included in this study. The RCMP requires that each designated facility be analyzed to identify any project-related impacts. SR-120 is a regional facility that is being analyzed in the forthcoming Manteca General Plan EIR. Therefore, this study includes CMP analyses of study segments of the McKinley Avenue Expressway and Airport Way.

The McKinley Avenue Expressway and Airport Way were evaluated based on their planned cross-sections using PM peak-hour volumes in accordance with the guidelines from the RCMP. The LOS was determined using the thresholds as specified by the RCMP. The results are shown in Table 3.13-16 and indicate that all CMP facilities are expected to operate at LOS D or better, which meets the CMP standard for these facilities.

Table 3.13-16: Congestion Management Plan Roadway Segment Operations – Cumulative Conditions

Roadway		Number of Lanes	Cumulative No Project Conditions		Cumulative Plus Project Conditions	
			Two-Way PM Peak-Hour Volume	LOS	Two-Way PM Peak-Hour Volume	LOS
1	Airport Way – Yosemite Avenue to SR-120	4	2,026	C	2,100	D
2	McKinley Avenue Expressway – SR-120 to Atherton Drive	6	2,409	C	3,670	D
3	McKinley Avenue Expressway – Atherton Drive to Woodward Avenue	4	2,409	D	2,140	D
4	McKinley Avenue Expressway – south of Woodward Avenue	4	1,367	C	1,460	C

Notes:
Source: Fehr and Peers Transportation Consultants, 2010.

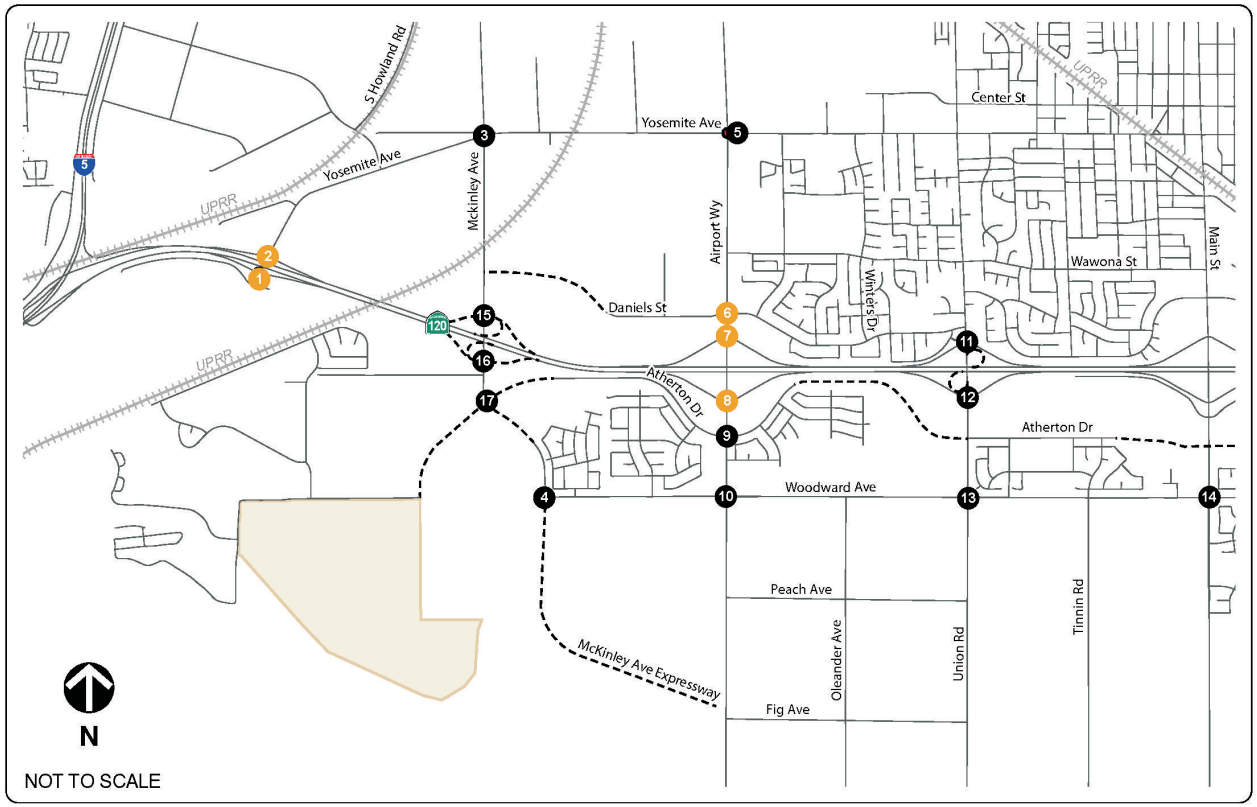
Impacts and Mitigation Measures

Below are descriptions of impacts and mitigation measures.

Intersections

As previously shown in Table 3.13-12, the SR-120/Airport Way and SR-120/Yosemite Avenue ramp intersections would operate at LOS E of F during one or both peak hours with the proposed project. Vehicle queues from the SR-120/Airport Way ramp intersections would cause operations at the Airport Way/Daniels Street and Airport Way/Atherton Drive intersections to also operate at LOS F during one or both peak hours. This impact is considered a potentially significant impact.

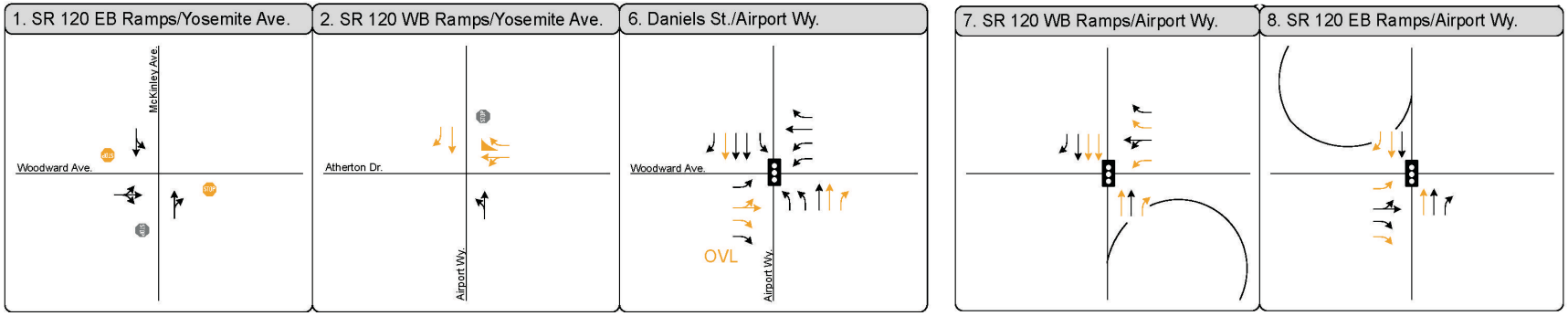
To mitigate this impact, the project applicant shall pay its fair share toward improvements to the SR-120/Airport Way and SR-120/Yosemite Avenue interchanges. The project's fair share traffic contribution to these interchanges is estimated to be 7.1 and 2.8 percent, respectively. The following improvements, which are shown on Exhibit 3.13-11, would be necessary at each interchange to accommodate the cumulative volumes:



LEGEND

- Mitigated Intersection
- Mitigation Measure
- Study Intersection, No Mitigation Needed
- Future Roadway
- OVL — Right-Turn Overlap Arrow
- Turn Lane
- Traffic Signal
- Stop Sign
- Channelized Right Turn
- Project Location

Note:
Cumulative mitigation consists of fair-share payment for needed improvements.



Source: Fehr & Peers Transportation Consultants.

NORTH

Michael Brandman Associates

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Exhibit 3.13-11
Cumulative Project Intersection Mitigations

SR-120/Airport Way Interchange

- Construct loop on-ramps.
- Widen overcrossing to include two northbound and three southbound lanes.
- Widen SR-120 EB and WB off-ramps to include two left-turn lanes and two right-turn lanes.
- Restripe the SB approach at the Airport Way/Daniels Street intersection to add a third through lane and restripe the NB approach to add an exclusive right-turn lane.
- Restripe the EB Daniels Street approach to include left, shared left/through, and two right-turn lanes with right-turn overlap phasing.

SR-120/Yosemite Avenue Interchange

- Install all-way stop at SR-120 EB Ramps/Yosemite Avenue intersection.
- Widen westbound off-ramp to include channelized "free" right-turn lane.
- Widen southbound Yosemite Avenue approach to include exclusive right-turn lane.

Implementation of the above improvements would substantially improve interchange operations; refer to Table 3.13-17. The applicant's contribution towards improvements at these interchanges is reflected in Mitigation Measure TRANS-2. However, the impact would remain significant and unavoidable, because this improvement is within the jurisdiction of Caltrans and there are no assurances that it would be constructed within a reasonable period of time. Furthermore, funding for the remaining share of the cost has not been identified.

Freeway Facilities

As previously shown in Table 3.13-13, the project would further exacerbate cumulatively unacceptable operations on SR-120. This impact is considered a potentially significant impact.

To mitigate this impact, the project applicant shall pay the appropriate San Joaquin County Regional Traffic Impact Fee (RTIF), which is collecting fees from new developments to help fund the widening of SR-120 to six lanes.

The widening of SR-120 to six lanes would improve operations to an acceptable level at 25 of the 30 study facilities (see Table 3.13-18). Payment of the RTIF is reflected in Mitigation Measure TRANS-1. Furthermore, by adding new residents to the area, the project would result in additional revenues through the Measure K sales tax, which helps fund the SR-120 widening. However, the impact would remain significant and unavoidable, because this improvement is within the jurisdiction of Caltrans and there are no assurances that it would be constructed within a reasonable period of time.

Table 3.13-17: Peak-Hour Intersection Level of Service – Cumulative Mitigations

Intersection		Jurisdiction	Control	Peak Hour	Cumulative Plus Project		Cumulative Plus Project w/ Mitigations	
					Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	SR-120 WB Ramps/ Yosemite Avenue	Caltrans	Side Street Stop	AM	22	C	15	C
				PM	**38**	**E**	14	B
2	SR-120 EB Ramps/ Yosemite Avenue	Caltrans	Side Street Stop	AM	**52**	**F**	16	C
				PM	12	B	11	B
3	Daniels Street/Airport Way	City of Manteca	Traffic Signal	AM	32	C	23	C
				PM	**>150**	**F**	50	D
4	SR-120 WB Ramps/Airport Way	Caltrans	Traffic Signal	AM	**110**	**F**	11	B
				PM	**>150**	**F**	16	B
5	SR-120 EB Ramps/ Airport Way	Caltrans	Traffic Signal	AM	**104**	**F**	10	B
				PM	**>150**	**F**	15	B
6	Atherton Drive/ Airport Way	City of Manteca	Traffic Signal	AM	**>150**	**F**	27	C
				PM	48	D	23	C

Notes:
Bolded cells represent unacceptable operations.
Source: Fehr and Peers Transportation Consultants, 2010.

Table 3.13-18: Peak-Hour Freeway Level of Service Cumulative Plus Project Conditions With Mitigations

Facility		Type	Peak Hour	Cumulative Plus Project		Cumulative Plus Project with Mitigation	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
15	SR-120 on-ramp from Union Road	Ramp Merge	AM	34	D	22	C
			PM	**—**	**F**	28	C
16	SR-120 WB from Main Street to Union Road	Mainline	AM	**44**	**E**	25	C
			PM	**—**	**F**	28	D
17	SR-120 WB from Union Road to Airport Way	Mainline	AM	**—**	**F**	28	D
			PM	**—**	**F**	30	D

Table 3.13-18 (cont.): Peak-Hour Freeway Level of Service Cumulative Plus Project Conditions With Mitigations

Facility		Type	Peak Hour	Cumulative Plus Project		Cumulative Plus Project with Mitigation	
				Density (pcpmpl)	LOS	Density (pcpmpl)	LOS
18	SR-120 WB from Airport Way to McKinley Avenue	Mainline	AM	—	**F**	28	D
			PM	—	**F**	28	D
19	SR-120 WB from McKinley Avenue to Yosemite Avenue	Mainline	AM	—	**F**	28	D
			PM	—	**F**	**36**	**E**
20	SR-120 WB from Yosemite Avenue to I-5	Mainline	AM	—	**F**	27	D
			PM	—	**F**	**43**	**E**
21	SR-120 WB off-ramp at Union Road	Ramp Diverge	AM	—	**F**	29	D
			PM	—	**F**	32	D
22	SR-120 WB off-ramp at Airport Way	Ramp Diverge	AM	—	**F**	31	D
			PM	—	**F**	33	D
23	SR-120 WB off-ramp at McKinley Avenue	Ramp Diverge	AM	—	**F**	32	D
			PM	—	**F**	31	D
24	SR-120 WB off-ramp at Yosemite Avenue	Ramp Diverge	AM	—	**F**	31	D
			PM	—	**F**	**35**	**E**
25	SR-120 WB loop on-ramp from Union Road	Ramp Merge	AM	**39**	**E**	27	C
			PM	—	**F**	29	D
26	SR-120 WB on-ramp from Union Road	Ramp Merge	AM	—	**F**	28	C
			PM	—	**F**	29	D
27	SR-120 WB on-ramp from Airport Way	Ramp Merge	AM	—	**F**	29	D
			PM	—	**F**	29	D
28	SR-120 WB loop on-ramp from McKinley Avenue	Ramp Merge	AM	—	**F**	31	D
			PM	—	**F**	30	D
29	SR-120 WB on-ramp from McKinley Avenue	Ramp Merge	AM	—	**F**	27	C
			PM	—	**F**	35	D
30	SR-120 WB on-ramp from Yosemite Avenue	Ramp Merge	AM	—	**F**	27	C
			PM	—	**F**	**37**	**E**

Notes:
Bolded cells represent unacceptable operations.
pcpmpl = passenger cars per mile per lane
Source: Fehr and Peers Transportation Consultants, 2010.

Conclusion

The proposed project would contribute to unacceptable intersection and freeway operations under Cumulative Conditions. Necessary improvements to improve operations to acceptable levels are identified in Mitigation Measure TRANS-2 and the RTP. However, in both cases, the City cannot assure that necessary improvements would be implemented, because the affected facility (SR-120) is under the jurisdiction of another agency. Therefore, the residual significance is significant and unavoidable.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-2 Prior to issuance of the first building permit, the project applicant shall provide the City of Manteca with proportionate-share fees for the following improvements to the SR-120/Airport Way and SR-120/Yosemite Avenue interchanges if there is an agreement in place between the City and Caltrans for improvements to these facilities. The City of Manteca shall transfer the collected fees to Caltrans in accordance with the agreement.

- SR-120/Airport Way Interchange (Applicant's proportionate share: 7.1 percent)
  - Construct loop on-ramps.
  - Widen overcrossing to include two northbound and three southbound lanes
  - Widen SR-120 EB and WB off-ramps to include two left-turn lanes and two right-turn lanes.
  - Restripe the SB approach at the Airport Way/Daniels Street intersection to add a third through lane and restripe the NB approach to add an exclusive right-turn lane.
  - Restripe the EB Daniels Street approach to include left, shared left/through, and two right-turn lanes with right-turn overlap phasing.
- SR-120/Yosemite Avenue Interchange (Applicant's proportionate share: 2.8 percent)
  - Install all-way stop at SR-120 EB Ramps/Yosemite Avenue intersection.
  - Widen westbound off-ramp to include channelized "free" right-turn lane.
  - Widen southbound Yosemite Avenue approach to include exclusive right-turn lane.

Level of Significance After Mitigation

Significant unavoidable impact.

Roadway Safety

Impact TRANS-3: The proposed project may substantially increase hazards that are due to a design feature or incompatible uses.

Impact Analysis

This impact assesses whether the proposed project would substantially increase hazards that are due to a design feature or incompatible uses. Issues evaluated include non-standard roadway design features, project access and internal circulation, railroad grade crossings, and surrounding agricultural uses.

Non-Standard Roadway Design Features

Woodward Avenue features a sharp horizontal curve in the northwest corner of the project site. The northbound Woodward Avenue approach to the curve features a 15-mph warning sign. Woodward Avenue is 20 to 24 feet in width approaching this curve. The curve "bulbs out" to a width of 33 feet. The project, by virtue of having an access on Woodward Avenue south of this curve, would add traffic to this curve. This is considered a potentially significant impact.

Mitigation Measure TRANS-3a is proposed that requires the applicant to redesign the horizontal curve on Woodward Avenue in the northwest quadrant of the project to have a radius of at least 180 feet, which would increase its design speed from 15 to 25 mph. This revised horizontal curve was evaluated in the context of the proposed lotting plan and the turning movement requirements of a truck. The site plan indicates that the lots nearest this curve will be set back a sufficient distance that would enable construction of this curve. The AutoTurn software program was used to evaluate the swept path of a WB-50 design truck through a 180-foot radius curve. It was determined that two 16-foot lanes could accommodate the truck without encroaching onto the oncoming lane. Implementation of this mitigation measure would reduce the impact to a level of less than significant.

Project Access and Internal Circulation Evaluation

Fehr & Peers evaluated project access and provided the following recommendations:

- Under cumulative plus project conditions, the segment of Woodward Avenue directly west of the Atherton Drive extension is projected to carry about 10,500 ADT. This segment will operate acceptably as two lanes. An exclusive left-turn pocket is recommended at the central project access. Right-turn deceleration lanes at the project accesses are not required.
- A traffic signal is required at the Woodward Avenue/Atherton Drive Extension/Tara Park Avenue intersection. This signal would be warranted under existing plus project conditions. This intersection is recommended to consist of one left and two through lanes on the northbound approach, one right and two through lanes on the southbound approach, and one left and one right lane on the eastbound approach.
- The proposed tentative map (Exhibit 2-4) shows Tara Park Avenue extending southerly from Woodward Avenue opposite the Atherton Drive Extension. Trails Loop Road would intersect

Tara Park Avenue approximately 400 feet south of Woodward Avenue. A second project access (E Street) would intersect Tara Park Avenue 600 feet south of Trails Loop Road. The terminus of Tara Park Avenue would provide access to the MF-1 parcel. Given the curvature of Trails Loops Road, the project applicant's engineer should confirm the adequacy of sight distance on residential street intersections.

- Trails Loop Road and East Street would each carry about 4,000 ADT directly west of Tara Park Avenue, with volumes decreasing as these streets extend further into the project. Lots 102-107 in Unit 6C would front directly onto Trails Loop Road (with driveways served from an alley) between Tara Park Avenue and the first internal roundabout. Since this segment will carry approximately 4,000 ADT and may experience moderate vehicle queues as vehicles wait to turn left onto Tara Park Avenue, Fehr & Peers recommends the following:
  - Relot Unit 6C so that residential lots do not front onto Trails Loop Road directly west of Tara Park Avenue.

- Tara Park Avenue will likely provide access to the Tara Park project located directly east of the Manteca Trails project. Since the specific type and quantity of land uses are not known, the amount of traffic expected to use Tara Park Avenue is also unknown. Following are some generalized recommendations for Tara Park Avenue based on its expected usage by the proposed project and spacing of access openings:
  - The segment of Tara Park Avenue between Woodward Avenue and Trails Loop Road will likely require two travel lanes in each direction.
  - Stop-control with full access is recommended on the Trails Loop Road and E Street approaches to Tara Park Avenue.
  - Development of Tara Park will likely require widening of Tara Park Avenue easterly. Exclusive southbound left-turn lanes will likely be necessary on Tara Park Avenue to accommodate ingress to Tara Park.

- Trails Loop Road would extend in a north-south direction along the easterly edge of the project for 0.6 mile from its begin/end point near Unit 6C to Running Way. Although traffic circles are proposed at the Trails Loop Road begin/end point (near Unit 6C) and at Running Way, no controls are shown between these locations. To discourage speeding and to "calm" traffic along this lengthy segment with fronting residences, Fehr & Peers recommends the following:
  - Install traffic circles, speed tables, speed legends, chicanes, and/or other approved traffic calming devices along the easterly segment of Trails Loop Road.

- In addition, Fehr & Peers recommends that the project applicant's engineer work with City staff to confirm that the dimensions and configurations of the onsite traffic circles can accommodate trucks and school buses. The inscribed diameter of most traffic circles within the plan area appears to be less than 100 feet. In contrast, the inscribed diameter of the traffic circle in a residential area north of Woodward Avenue (on Grafton Street) is approximately 140 feet wide.

These recommendations are reflected in Mitigation Measure TRANS-3b. The implementation of this mitigation measure would reduce impacts to a level of less than significant.

Railroad Grade Crossings

McKinley Avenue features an at-grade crossing of the Union Pacific Oakland Subdivision approximately 1 mile north of the project site. The project would result in the volume of traffic crossing this track to increase from 900 to 4,900 vehicles per day. This grade crossing has advanced warning signs, railroad crossing pavement markings, stop lines, crossing gates, flashing lights, and warning bells. Although the project would not cause an increase in delay during train crossings that would correspond to LOS E or worse conditions, there is the possibility that the increase in traffic volumes may increase the potential for impatient motorists to circumvent activated crossing gates, thereby creating the possibility for a collision.

As such, Mitigation Measure TRANS-3c requires the City of Manteca to monitor the grade crossing for unsafe conditions after the first certificate of occupancy for the first dwelling unit has been issued. Because the McKinley Avenue grade crossing currently provides standard grade crossing safety equipment, the monitoring is intended to determine if the installation of a raised median on both approaches is necessary to further enhance the safety of this crossing. The mitigation measure requires the applicant to front the full cost of this improvement, which the City will hold in escrow until the raised median is determined to be necessary. A provision in the mitigation measure allows for the applicant's obligation for this improvement to be reduced in the event that other funding sources become available. With the implementation of this mitigation measure, impacts would be less than significant.

Surrounding Agricultural Uses

Agricultural uses exist north, east, and south of the project site. Farm equipment (e.g., tractors) have been observed to roadways in the project vicinity, including E. Woodward Avenue, S. Woodward Avenue, and McKinley Avenue. Thus, potential safety conflicts between project-related traffic and slow-moving agricultural equipment on these roadways is a concern.

The proposed project is required to implement half-width improvements along its frontage with E. Woodward Avenue and S. Woodward Avenue. The improvements would provide additional roadway width that would allow faster moving traffic to safely pass slow-moving farm equipment.

In the long term, the agricultural uses that are directly north and east of the project site are anticipated to be converted to urban uses. This would result in the elimination of farm equipment using roadways in the project vicinity.

Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-3a Prior to recordation of the final map, the project applicant shall redesign the horizontal curve on Woodward Avenue in the northwest quadrant of the project to have a radius of at least 180 feet, which would increase its design speed from 15 mph to 25 mph.

MM TRANS-3b Prior to recordation of the final map, the project applicant shall make the following changes, which shall be reflected on the map and the conditions of approval. The applicant is responsible for the full cost of the changes outlined below.

- Relot Unit 6C so that residential lots do not front onto Trails Loop Road directly west of Tara Park Avenue, which is projected to carry approximately 4,000 average daily trips and may experience moderate queues as vehicles wait to turn onto Tara Park Avenue.
- A traffic signal shall be installed at the Woodward Avenue/Atherton Drive Extension/Tara Park Avenue intersection prior to opening day.
- Stop-control with full access shall be installed at Trails Loop Road and E Street approaches to Tara Park Avenue prior to opening day.
- To accommodate future development of Tara Park, the segment of Tara Park Avenue between Woodward Avenue and Trails Loop Road shall be a minimum of two travel lanes in each direction. Exclusive southbound left-turn lanes shall be installed to provide ingress to Tara Park.
- Install traffic circles, speed tables, speed legends, chicanes, and/or other approved traffic calming devices along the easterly 0.6-mile segment of Trails Loop Road prior to opening day.
- The dimensions and configurations of the onsite traffic circles shall be verified with the City staff to determine that they can accommodate trucks and school buses. In addition, the adequacy of sight distance on residential streets that intersect Trails Loop Road shall be confirmed. Necessary revisions shall be reflected on the map.

MM TRANS-3c After issuance of the first certificate of occupancy for the first dwelling unit, the City of Manteca, in conjunction with the County of San Joaquin and the California Public Utilities Commission, shall monitor operations and safety at the McKinley Avenue grade crossing with the Union Pacific Oakland Subdivision to determine whether additional safety improvements are warranted. Such safety improvements would consist of the installation of a raised roadway median on both approaches to discourage wrong-way travel when the gates have been activated. The project applicant shall front the full cost of this improvement in advance of the issuance of the first certificate of the occupancy, which the City of Manteca shall hold in escrow

until monitoring determines that the raised median is necessary. The project applicant's financial obligation for the cost of the median may be reduced to the extent other funding sources (e.g., Measure K or Section 130) become available. At the time the safety improvements are determined to be warranted, the City of Manteca shall coordinate with agencies with jurisdiction over the McKinley Avenue grade crossing to install the improvements.

Level of Significance After Mitigation

Less than significant impact.

Emergency Access

Impact TRANS-4: The proposed project may result in inadequate emergency vehicle access.

Impact Analysis

Until the Atherton Drive extension is completed, E. Woodward Avenue would be the only roadway that provides access to the proposed project. E. Woodward Avenue is a two-lane, undivided rural roadway with no shoulder. If E. Woodward Avenue were to become impassable because of an incident (fire, flooding, auto accident), emergency responders could not reach the project site, nor could it be evacuated. This is considered a potentially significant impact.

Mitigation Measure TRANS-4 is proposed requiring the project applicant to establish a temporary emergency vehicle access (EVA) to the project site from the east until a second permanent roadway is developed. Based on site reconnaissance, it is anticipated that the existing dry levee would be the logical alignment for the temporary EVA, as this route would link up to city streets in the planned Terra Ranch development to the east. However, if the levee alignment was found to be infeasible, another option would be to use the existing unpaved agricultural roads between the project site and Terra Ranch. Exhibit 3.13-12 depicts conceptual EVA alignments. With the implementation of the temporary EVA, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-4 Prior to approval of the final map, the project applicant shall identify a temporary emergency vehicle access (EVA) to the proposed project. The temporary EVA shall provide access from the east and be maintained until a second permanent roadway connection is established (e.g., Woodward Avenue after the Atherton Drive extension). The temporary EVA alignment shall be suitable for use by large emergency vehicles (e.g., fire engines) and be reviewed and approved by the City of Manteca. The temporary EVA shall be established prior to the issuance of the first certificate of occupancy for any dwelling units.

Level of Significance After Mitigation

Less than significant impact.

Public Transit, Bicycles, and Pedestrians

Impact TRANS-5: The proposed project may not provide adequate access for public transit, bicycles, and pedestrians.

Impact Analysis

This impact will evaluate project accessibility to public transit, bicycles, and pedestrians.

Public Transit

The tentative map shown in Exhibit 2-4 does not depict any transit facilities within the project site. The project would not disrupt existing or planned transit services or facilities or create an inconsistency with applicable policies related to transit. However, because the project does not include provisions to accommodate future transit service, this impact is considered significant.

Mitigation Measure TRANS-5a requires the project applicant shall incorporate bus turnouts and shelters into the project site plan as required by the City's Public Works Department and Manteca Transit. The implementation of this mitigation measure would reduce the above impact to a level of less than significant.

Bicycles

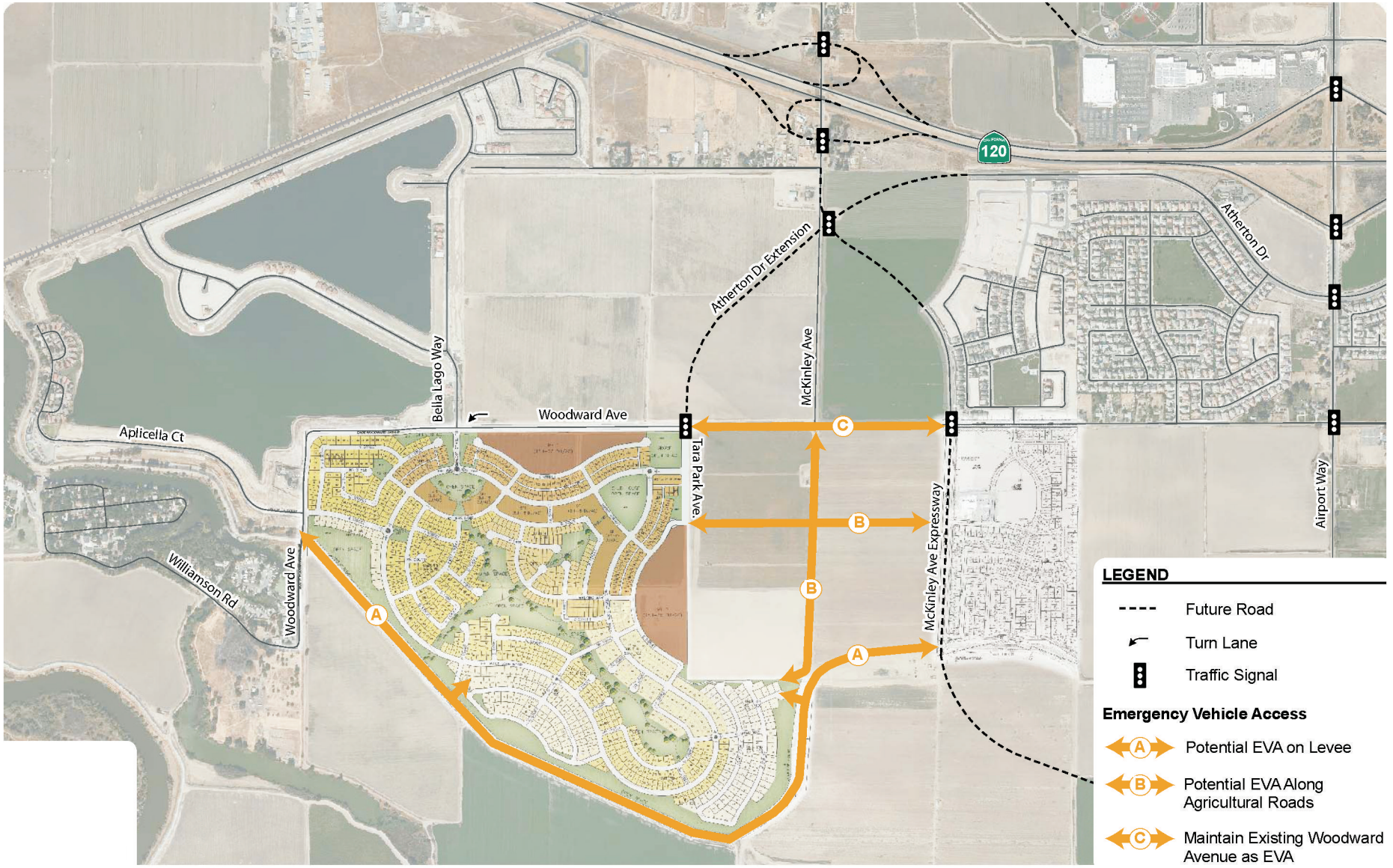
The City's Bikeway Master Plan identifies future bicycle facilities along Woodward Avenue. As such, Mitigation Measure TRANS-5b requires the project applicant to construct a bicycle facility along the project's frontage on Woodward Avenue in accordance with planned improvements in the latest version of the City's Bikeway Master Plan. This improvement would provide consistency with the City's Bikeway Master Plan and enable future bike/pedestrian travel easterly to Atherton Drive.

Additionally, project residents may seek to travel by bicycle. To ensure that dwelling units provide secure and convenient bicycle storage space, Mitigation Measure TRANS-5c requires that each dwelling unit (single-family and multi-family) provide enclosed storage in non-living areas with sufficient room to store two bicycles.

With the implementation of these mitigation measures, impacts would be reduced to a level of less than significant.

Pedestrians

The proposed project would include a 12-mile trail system within the project that would connect with the City facilities. In addition, the project applicant is required to install half-width improvements along the project frontage with Woodward Avenue, which would include a sidewalk. These facilities would facilitate safe and convenient pedestrian travel within the project site. Impacts would be less than significant.



Source: Fehr & Peers Transportation Consultants.

NORTH

Michael Brandman Associates

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Exhibit 3.13-12
Potential Emergency Vehicle Access Alignments

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-5a Prior to approval of the final map, the applicant shall identify suitable locations for bus stops as required by the City of Manteca. Such stops may be located along the project frontage with E. Woodward Avenue or within the project boundaries. All stops shall include, at a minimum, a turn-out, seating, transit information, and connection to a sidewalk or comparable pedestrian facility to nearby uses.

MM TRANS-5b Prior to approval of the final improvement plans, the applicant shall depict bicycle facilities along the Woodward Avenue frontage with the proposed project in accordance with planned improvements in the latest version of the City's Bikeway Master Plan.

MM TRANS-5c Prior to issuance of building permits, the applicant shall demonstrate that each dwelling unit (single-family and multi-family) provides enclosed space suitable for storage of at least two bicycles. Such enclosed space may consist of garages, storage rooms, closets, or other non-living area spaces that allow the occupant(s) to securely store a bicycle and avoid exposure to theft or adverse weather conditions.

Level of Significance After Mitigation

Less than significant impact.

Construction Traffic and Parking

Impact TRANS-6: Construction activities associated with the proposed project may result in delays on surrounding streets.

Impact Analysis

Traffic conditions during construction of the project will generate traffic related to construction employees and equipment, and hauling fill and construction material to and from the site. The highest volumes of construction traffic will occur during the period when the project site is graded and the hauling of import and export soil material will occur.

Typically weekday construction activities would occur between 7:00 a.m. and end around 3:00 p.m. Construction traffic will coincide only with AM peak-hour traffic. During the grading phase, construction traffic is estimated to generate roughly 122 AM peak-hour trips. This figure consists of construction workforce trips arriving at the project site (assumed to be 50 trips) and 18 truck trips (which are equivalent to 72 passenger vehicles). Table 3.13-19 compares the construction trip generation with operational trip generation during the AM peak hour. As shown in the table, even the most intensive phase of construction would generate 1,003 fewer trips during the AM peak hour than project operations would on a typical weekday. Additionally, construction activities are temporary

and these trips would cease once the project is completed. As such, it can be reasoned that construction traffic would not represent a significant impact to intersection, roadway segment, or queuing impacts on local roadways.

Table 3.13-19: AM Peak-Hour Trip Generation Comparison

AM Peak Hour				
Construction			Operations	Difference
Worker Trips	Truck Trips*	Total Trips	Total Trips	Total Trips
50	72	122	1,125	(1,003)

Notes:
* 1 truck trip = 4 passenger vehicle equivalent trips. Thus, 18 truck trips = 72 passenger vehicle equivalent trips. The estimate of 18 truck trips during the AM peak hour is based on an estimate of 70 truck trips per typical 8-hour workday during the grading phase or 8.75 trips per hour.
AM peak-hour operations trips reflect the value shown in Table 3.13-7.
Source: Michael Brandman Associates, 2010; Fehr & Peers, 2010.

During the construction period, delivery and haul trucks would travel on SR-120 and exit at either Yosemite Avenue or Airport Way. From Yosemite Avenue, trucks would travel to McKinley Avenue and then south to E. Woodward Avenue. From Airport Way, trucks would travel south and turn west on E. Woodward Avenue. The presence of large and slow-moving vehicles and construction equipment on roadways in the project vicinity may cause delays and inconvenience for motorists. Additionally, project construction activities may result in temporary lane closures along E. Woodward Avenue and S. Woodward Avenue. Accordingly, mitigation is proposed requiring the project applicant to implement a Construction Traffic Control Plan during construction activities to minimize impacts on surrounding roadways and nearby parking areas. The implementation of this mitigation measure would reduce potential impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-6 Prior to the commencement of construction activities, the project applicant shall prepare and submit a Construction Traffic Control Plan for review and approval by the City of Manteca. The plan shall identify routing for all delivery and haul trucks and, if necessary, limit deliveries to non-peak times. To the extent feasible, truck routing should avoid or minimize travel through residential areas. The plan shall also identify suitable locations for construction worker parking.

Level of Significance After Mitigation

Less than significant impact.

SECTION 4: CUMULATIVE EFFECTS

4.1 - Introduction

CEQA Guidelines Section 15130 requires the consideration of cumulative impacts within an EIR when a project's incremental effects are cumulatively considerable. Cumulatively considerable means that " . . . the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." In identifying projects that may contribute to cumulative impacts, the CEQA Guidelines allow the use of a list of past, present, and reasonably anticipated future projects, producing related or cumulative impacts, including those which are outside of the control of the lead agency.

In accordance with CEQA Guidelines Section 15130(b), " . . . the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, the discussion need not provide as great [a level of] detail as is provided for the effects attributable to the project alone." The discussion should be guided by standards of practicality and reasonableness, and it should focus on the cumulative impact to which the identified other projects contribute rather than on the attributes of other projects that do not contribute to the cumulative impact.

The proposed project's cumulative impacts were considered in conjunction with other proposed and approved projects in Manteca, Lathrop, and unincorporated San Joaquin County. Table 4-1 provides a list of the other projects considered in the cumulative analysis.

Table 4-1: Cumulative Projects

Jurisdiction	Project	Characteristics	Location	Status
City of Manteca	Antigua	119 dwelling units	Union Road/Atherton Drive	Completed
	Bright World Estates	21 dwelling units	7276 E. Woodward Avenue	Pending
	Dutra Estates	353 dwelling units	3731 E. Woodward Avenue	Under construction
	Ken Hill Estates	12 dwelling units	7285 E. Woodward Avenue	Under construction
	Lincoln Estates	20 dwelling units	636 N. Lincoln Avenue	Completed
	Machado Estates	560 dwelling units	20329 S. Airport Way	Pending
	Silva Estates	215 dwelling units	Union Road/Woodward Avenue	Approved Tentative Map
	Oleander Estates	544 dwelling units	1601 W. Woodward Avenue	Approved Tentative Map

Table 4-1 (cont.): Cumulative Projects

Jurisdiction	Project	Characteristics	Location	Status
	Paseo West	189 dwelling units	571 E. Woodward Avenue	Under construction
	Sundance	451 dwelling units	5287 and 5299 E. Woodward Avenue	Approved Tentative Map
	Terra Ranch	427 dwelling units	3251 E. Woodward Avenue	Pending
	Winters Colonial Estates	40 dwelling units	9202 E. Woodward Avenue	Approved Tentative Map
	Union Crossing	450,000 square feet commercial retail/restaurant/offices	20109 S. Union Road	Approved
	Promenade	660,179 square feet multiple commercial retail outlets	1490 S. Union Road	Under construction
	Lowe's Stadium Center Phase III	172,000 square feet commercial retail	2000 Daniels Street	Approved
	Microtel	31351 square feet (71 room) inn and hotel	1095 S. Airport Way	Plan check
County of San Joaquin	Oakwood Shores	480 dwelling units	E. Woodward Avenue/ S. Woodward Avenue	Partially completed
City of Lathrop	Lathrop Gateway Business Park	68 acres office/ commercial; 190 acres limited industrial; 49 acres service commercial; 77 acres roads and public facilities	W. Yosemite Avenue/ State Route 120	Pending
Multiple	McKinley Avenue/SR-120 Interchange	New full-access interchange	McKinley Avenue/SR-120	Proposed
Source: City of Manteca, 2010; City of Lathrop, 2010; County of San Joaquin, 2010.				

4.2 - Cumulative Impact Analysis

The cumulative impact analysis below is guided by the requirements of CEQA Guidelines Section 15130. Key principles established by this section include:

- A cumulative impact only occurs from impacts caused by the proposed project and other projects. An EIR should not discuss impacts that do not result from the proposed project.
- When the combined cumulative impact from the increment associated with the proposed project and other projects is not significant, an EIR need only briefly explain why the impact is not significant; detailed explanation is not required.

- An EIR may determine that a project's contribution to a cumulative effect impact would be rendered less than cumulatively considerable if a project is required to implement or fund its fair share of mitigation intended to alleviate the cumulative impact.

The cumulative impact analysis that follows relies on these principles as the basis for determining the significance of the proposed project's cumulative contribution to various impacts.

4.2.1 - Aesthetics, Light, and Glare

The geographic scope of the cumulative aesthetics, light, and glare analysis is the area surrounding the project area. This is the area within view of the project and, therefore, the area most likely to experience changes in visual character or experience light and glare impacts.

Several of the projects listed in Table 4-1 may have the potential to impact aesthetics, light, and glare. The proposed project would not have significant impacts on scenic vistas, visual character, or light and glare because the proposed project would establish design standards and guidelines that provide certainty that the proposed development does not degrade visual character and does not introduce substantial sources of light and glare that degrade daytime and nighttime views. Other projects that result in significant impacts on aesthetics, light, and glare would be required to mitigate for their impacts. Because the proposed project's impacts would be less than significant and would not require mitigation, it would not have a cumulative considerable impact.

4.2.2 - Agricultural Resources

The geographic scope of the cumulative agricultural resources analysis is San Joaquin County. Agricultural resources are most commonly evaluated in the context of countywide resources; therefore, it is most appropriate to use this as the basis for assessing cumulative impacts.

Several of the projects listed in Table 4-1 would occur on land mapped as Prime Farmland and, therefore, would have the potential to convert farmland to non-agricultural use. The proposed project would convert as much as 477 acres of Important Farmland to urban uses. The proposed project exceeds the threshold of significance for conversion of Important Farmland to non-agricultural use according to the Land Evaluation and Site Assessment model. Therefore, mitigation is proposed requiring the project applicant to pay the City's agricultural mitigation fee. However, this would not fully mitigate the impact to a level of less than significant and the residual significance of this impact would be significant and unavoidable. Other projects that convert significant amounts of Important Farmland to non-agricultural use would also contribute to this cumulative impact. As such, the proposed project has a cumulatively considerable impact.

The entire project site is encumbered by a Williamson Act Contract that dates to 1976. The property owner filed a Notice Non-Renewal in November 2005 to initiate termination of the contract. The property owner subsequently filed a Petition for Cancellation of Contract with the City of Manteca in March 2009. The impact could be mitigated to a level of less than significant with the payment of the

cancellation fee. Other projects that result in significant impacts on cancellation of Williamson Act Contract would be required to mitigate for their impacts. Because the proposed project's impacts would be less than significant after mitigation, it would not have a cumulative considerable impact.

4.2.3 - Air Quality/Greenhouse Gas Emissions

The geographic scope of the cumulative air quality analysis is the San Joaquin Valley Air Basin. Air pollution is regarded as a regional issue; therefore, this area would be the area most likely to be impacted by project emissions.

All of the projects listed in Table 4-1 would result in new air emissions, during construction or operations (or both). The proposed project would emit construction and operational emissions at levels that would exceed the San Joaquin Valley Air Pollution Control District (SJVAPCD) thresholds. Mitigation is proposed requiring the implementation of feasible emissions reductions measures; however, these measures would not fully reduce emissions to below SJVAPCD thresholds. Therefore, a significant unavoidable impact associated with air quality violations (construction and operations) and air quality attainment plan consistency would occur. Other projects that exceed SJVAPCD thresholds would also contribute to this cumulative impact. As such, the proposed project has a cumulatively considerable impact.

Other projects would also emit new greenhouse gas emissions. The proposed project was found to have a significant unavoidable impact because it cannot achieve the SJVAPCD's 29-percent reduction target for greenhouse gas emissions. Other projects would also be required to reduce greenhouse gas emissions, although they also may not be able to achieve the 29-percent target. As such, the proposed project has a related cumulatively considerable impact.

All other project-related air quality impacts were found to be less than significant and did not require mitigation (e.g., sensitive receptors, odors, carbon monoxide hotspots). Other projects that result in similar impacts would be required to mitigate for their impacts. Because the proposed project can mitigate all of these remaining air quality impacts to a level of less than significant, it would not have a related cumulative considerable impact.

4.2.4 - Biological Resources

The geographic scope of the cumulative biological resources analysis is the project vicinity. Biological impacts tend to be localized; therefore, the area near the project area would be the area most affected by project activities (generally within a 0.5-mile radius).

Several of the projects listed in Table 4-1 may have the potential to impact biological resources. The proposed project would have significant impacts on special-status species, riparian habitat, wetlands, conflicts with local biological policies, and conflicts with an adopted habitat conservation plan that could be mitigated to a level of less than significant. All other project-related biological impacts were found to be less than significant and did not require mitigation. Other projects that result in similar

impacts would be required to mitigate for their impacts. Because the proposed project can mitigate all of its biological impacts to a level of less than significant, it would not have a related cumulative considerable impact.

4.2.5 - Cultural Resources

The geographic scope of the cumulative cultural resources analysis is the project area. Cultural resource impacts tend to be localized; therefore, the area near the project area would be the area most affected by project activities (generally within a 500-foot radius).

Several of the projects listed in Table 4-1 may have the potential to impact cultural resources. The proposed project would have significant impacts on historical resources, archaeological resources, paleontological resources, and burial sites that could be mitigated to a level of less than significant. Other projects that result in similar impacts would be required to mitigate for their impacts. Because the proposed project can mitigate all of its impacts to a level of less than significant, it would not have a cumulative considerable impact.

4.2.6 - Geology, Soils, and Seismicity

The geographic scope of the cumulative geology, soils, and seismicity analysis is the project area. Geologic, soil, and seismic impacts tend to be localized; therefore, the area near the project area would be the area most affected by project activities.

Several of the projects listed in Table 4-1 may have the potential to impact geology, soils, and seismicity. The proposed project would have significant impacts on seismic hazards, erosion, and unstable geologic units and soils that could be mitigated to a level of less than significant. All other project geologic impacts were found to be less than significant and did not require mitigation. Other projects that result in similar impacts would be required to mitigate for their impacts. Because the proposed project can mitigate all of its impacts to a level of less than significant, it would not have a cumulative considerable impact.

4.2.7 - Hazards and Hazardous Materials

The geographic scope of the cumulative hazards and hazardous materials analysis is the project area. Adverse affects of hazards and hazardous materials tend to be localized; therefore, the area near the project area would be most affected by project activities.

Several of the projects listed in Table 4-1 may have the potential to impact hazards and hazardous materials. The proposed project would have significant impacts associated with hazardous materials from past or present site usage as well as the potential for risk of upset that could be mitigated to a level of less than significant. All other project-related hazards impacts were found to be less than significant and did not require mitigation. Other projects that result in similar impacts would be required to mitigate for their impacts. Because the proposed project can mitigate all of its impacts to a level of less than significant, it would not have a cumulative considerable impact.

4.2.8 - Hydrology and Water Quality

The geographic scope of the cumulative hydrology and water quality analysis is the Manteca area. Hydrologic and water quality impacts concern local waterways and groundwater sources, which affect the greater Manteca area.

Several of the projects listed in Table 4-1 may have the potential to impact hydrology and water quality. The proposed project would have significant impacts on short-term water quality, long-term water quality, and drainage, and 100-year flood hazards that could be mitigated to a level of less than significant. All other project hydrology impacts were found to be less than significant and did not require mitigation. Other projects that result in similar impacts would be required to mitigate for their impacts. Because the proposed project can mitigate all of its impacts to a level of less than significant, it would not have a cumulative considerable impact.

4.2.9 - Land Use

The geographic scope of the cumulative land use analysis is the Manteca area. Land use decisions are made at the city level; therefore, the Manteca area is an appropriate geographic scope.

The proposed project was found to be consistent with the City of Manteca General Plan, and the Manteca Municipal Code. Mitigation was required for consistency with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) and was found to reduce impacts to a level of less than significant. Other projects would be required to demonstrate consistency with applicable land use plans and mitigate where necessary. Because the residual significance of the proposed project impacts would be less than significant, it would not have a cumulative considerable impact.

4.2.10 - Noise

The geographic scope of the cumulative noise analysis is the project vicinity, including surrounding sensitive receptors. Noise impacts tend to be localized; therefore, the area within 0.5-mile of the project site would be the area most affected by project activities.

All of the projects listed in Table 4-1 have the potential to introduce new sources of noise that could expose nearby receptors to excessive noise levels. The proposed project would contribute to offsite roadway noise levels that exceed acceptable standards. Soundwalls would be along the proposed project's roadway frontages to mitigate the impact to the project residents; however, no feasible mitigation is available for offsite locations. Other projects shown in Table 4-1 would generate trips that contribute to this cumulative impact. As such, the proposed project has a cumulatively considerable impact.

The proposed project has significant impacts associated with construction noise, onsite roadway noise, and stationary noise that could be mitigated to a level of less than significant. Other projects that result in similar impacts would be required to mitigate for their impacts. Because the proposed

project can mitigate all of its noise impacts to a level of less than significant, it would not have a related cumulative considerable impact.

4.2.11 - Population and Housing

The geographic scope of the cumulative population and housing analysis is the San Joaquin Council of Governments (SJCOG) region. The proposed project, in conjunction with other future development in Manteca, is within the growth projections provided by SJCOG. The proposed project would not have a significant impact on housing and jobs balance but would help the City meet its Regional Housing Needs Allocation. Therefore, the proposed project, in conjunction with other planned projects, would not have a cumulatively considerable impact on population and housing.

4.2.12 - Public Services and Utilities

The geographic scope of the cumulative public services analysis is the Manteca area. The service area of the respective service providers primarily encompasses Manteca and surrounding communities and, therefore, would be most affected by project activities.

The proposed project was found to have significant impacts on fire protection, schools, parks, libraries, water supply, wastewater, storm drainage, and solid waste. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Other projects would be required to evaluate whether sufficient public services and utilities are available and mitigate where necessary. Because the residual significance of the proposed project impacts would be less than significant, it would not have a cumulative considerable impact.

4.2.13 - Transportation

The geographic scope of the cumulative transportation analysis is the Manteca/Lathrop area. Note that Section 3.13, Transportation provides a detailed evaluation of project-related transportation impacts.

All the new development projects listed in Table 4-1 would generate new vehicle trips that may trigger or contribute to unacceptable intersection operations, roadway operations, and freeway operations. All projects would be required to mitigate for their fair share of impacts. The proposed project would generate 14,413 daily trips, including 1,125 trips during the weekday morning peak hour and 1,483 trips during the weekday afternoon peak hour. The proposed project would contribute trips to intersection and freeway facilities that would operate at unacceptable levels under Existing Plus Project and Cumulative conditions. All feasible mitigation measures are proposed that would improve operations to acceptable levels. However, there is uncertainty whether all necessary improvements would be fully funded and implemented as contemplated; the residual significance is significant and unavoidable. Therefore, the proposed project, in conjunction with other projects, would have a cumulatively considerable contribution to unacceptable intersection, roadway, and freeway operations.

For other transportation-related areas, the proposed project would have significant impacts on roadway hazards emergency access, alternative transportation, and construction traffic and parking. After the implementation of mitigation, these impacts would be reduced to a level of less than significant. Other projects that result in similar impacts would be required to mitigate for their impacts. Because the proposed project can mitigate all of its impacts to a level of less than significant, it would not have a related cumulative considerable impact.

SECTION 5: ALTERNATIVES TO THE PROPOSED PROJECT

5.1 - Introduction

In accordance with CEQA Guidelines Section 15126.6, this Environmental Impact Report (EIR) contains a comparative impact assessment of alternatives to the proposed project. The primary purpose of this section is to provide decision makers and the general public with a reasonable number of feasible project alternatives that could attain most of the basic project objectives, while avoiding or reducing any of the project's significant adverse environmental effects. Important considerations for these alternatives analyses are noted below (as stated in CEQA Guidelines Section 15126.6).

- An EIR need not consider every conceivable alternative to a project;
- An EIR should identify alternatives that were considered by the lead agency, but rejected as infeasible during the scoping process;
- Reasons for rejecting an alternative include:
    - Failure to meet most of the basic project objectives;
    - Infeasibility; or
    - Inability to avoid significant environmental effects.

5.1.1 - Significant Unavoidable Impacts

The proposed project would result in the following significant unavoidable impacts:

- **Important Farmland:** The proposed project would convert Important Farmland to non-agricultural use. Although mitigation is proposed that would require the applicant to pay the City of Manteca's agricultural mitigation fee, it would not fully mitigate the impact to a level of less than significant. Therefore, the residual significance of this impact is significant and unavoidable.
- **Air Quality Violations – Construction and Operational Emissions:** Construction and operational emissions would exceed San Joaquin Valley Air Pollution Control District (SJVAPCD) thresholds. Mitigation is proposed requiring the implementation of feasible emissions reduction measures; however, these measures would not reduce emissions to below SJVAPCD thresholds. Therefore, the residual significance of this impact is significant and unavoidable.
- **Air Quality Attainment Plan Consistency:** Because construction and operational emissions would exceed SJVAPCD, they would be inconsistent with the agency's regional quality planning assumptions. Mitigation is proposed requiring the implementation of feasible emissions reduction measures; however, these measures would not reconcile this inconsistency. Therefore, the residual significance of this impact is significant and unavoidable.

- **Cumulative Air Quality:** Because project emissions result in a significant unavoidable air quality impact associated with air quality violations and air quality attainment plan consistency, a significant unavoidable cumulative air quality impact would occur.
- **Greenhouse Gas Emissions:** Construction and operational greenhouse gas emissions would exceed SJVAPCD thresholds. Mitigation is proposed requiring the implementation of feasible emissions reduction measures; however, these measures would not reduce emissions to below SJVAPCD thresholds. Therefore, the residual significance of this impact is significant and unavoidable.
- **Offsite Roadway Noise:** The proposed project's vehicle trips would contribute to offsite roadway noise levels that exceed acceptable noise exposure standards for adjoining land uses. No feasible mitigation is available to mitigate this impact. Therefore, the residual significance of this impact is significant and unavoidable.
- **Existing Plus Project Traffic:** The proposed project would generate vehicle trips that would contribute to unacceptable intersection under Existing Plus Project conditions. Mitigation is proposed that would require the applicant to contribute fees to fund necessary improvements; however, there is uncertainty regarding actual implementation of the improvements. As such, the residual significance of this impact is significant and unavoidable.
- **Cumulative Traffic:** The proposed project would generate vehicle trips that would contribute to unacceptable intersection and freeway operations under Cumulative conditions. Mitigation is proposed that would require the applicant to contribute fees to fund necessary improvements; however, there is uncertainty regarding actual implementation of the improvements. As such, the residual significance of this impact is significant and unavoidable.

5.1.2 - Alternatives to the Proposed Project

The three alternatives to the proposed project analyzed in this section are as follows:

- **No Project Alternative:** The project site would remain in its existing condition and no new development would occur.
- **Reduced Density Alternative:** A residential development consisting of 1,237 dwelling units (single-family and multi-family) would developed on 250 acres of the developable portion of the project site. The remaining 50 acres would remain in agricultural production.
- **Single-Family Residential Alternative:** A residential development consisting of 1,300 single-family detached residential units would be developed on the 300-acre developable portion of the project site.

Three alternatives to the proposed project are analyzed below. These analyses compare the proposed project and each individual project alternative. In several cases, the description of the impact may be

the same under each alternative when compared with the CEQA Thresholds of Significance (i.e., both the project and the alternative would result in a less than significant impact). The actual degree of impact may be slightly different between the proposed project and each alternative, and this relative difference is the basis for a conclusion of greater or lesser impacts.

5.2 - Project Objectives

As stated in Section 2, Project Description, the objectives of the proposed project are to:

- Promote economic growth through new capital investment, an expanded population base, and an expanded tax base.
- Provide new residential opportunities to accommodate forecasted population growth within the City of Manteca.
- Provide a diversity of housing choices in one development that would cater to various segments of the community.
- Develop land to its highest and best use within the City of Manteca city limits and primary urban service boundary.
- Provide a high-quality residential development project that offers recreational and open space amenities for residents.

5.3 - Alternative 1 - No Project Alternative

Under the No Project Alternative, the project site would remain in its existing condition and no new development would occur.

5.3.1 - Impact Analysis

The project site would remain in its existing condition and no changes would occur. The existing agricultural activities would continue for the foreseeable future.

Under the No Project Alternative, all of the proposed project's significant unavoidable impacts would be avoided, and its potentially significant impacts that can be mitigated to a level of less than significant would not occur.

5.3.2 - Conclusion

The No Project Alternative would avoid all of the proposed project's significant unavoidable impacts and have less impact on all environmental topical areas. However, this alternative would not advance any of the project objectives, and it is not a reasonable expectation for the property owner to keep the site in agricultural production for the foreseeable future because it is within the Manteca city limits and is designated for urban development by the General Plan and Zoning Ordinance. Furthermore,

this alternative would not realize the project benefits associated with new capital investment, new jobs, new housing opportunities, and new recreational amenities.

5.4 - Alternative 2 – Reduced Density Alternative

Under the Reduced Density Alternative, the proposed project would be reduced by 25 percent in terms of both acreage and dwelling units.

This alternative would develop 1,237 dwelling units on 250 acres of the developable portion of the project site. The remaining 50 acres, which would consist of the acreage in the southeastern portion of the site, would remain in agricultural production and encumbered by the Williamson Act contract until the contract expires. This layout is intended to cluster the urban development as close to E. Woodward Avenue and S. Woodward Avenue as possible, and keep the portions of the project site that are furthest away from these roadways in agricultural production.

The area south of the dry levee would remain in agricultural production and encumbered by the Williamson Act contract until the contract expires.

This alternative would require similar discretionary approvals as the proposed project, including General Plan Amendment, rezone, planned development adoption, subdivision map, development agreement, and Williamson Act cancellation.

Table 5-1 summarizes the Reduced Density Alternative. The purpose of the Reduced Density Alternative is to reduce project acreage and dwelling units, which in turn would reduce impacts associated with aesthetics, agricultural resources, biological resources, hydrology, air quality, noise, public services and utilities, and transportation.

Table 5-1: Reduced Density Alternative Summary

Scenario	Category	Figure
Reduced Density Alternative	Single-Family Dwelling Units	883
	Townhomes/Garden Apartment	144
	Apartments	210
	Dwelling Units Total	1,237
	Developed Acreage	250
Proposed Project	Single-Family Dwelling Units	1,178
	Townhomes/Garden Apartment	192
	Apartments	280
	Dwelling Units Total	1,650
	Developed Acreage	300

Table 5-1 (cont.): Reduced Density Alternative Summary

Scenario	Category	Figure
Difference	**Dwelling Units Total**	**(413)**
	Developed Acreage	**(50)**
Source: Michael Brandman Associates, 2010.		

5.4.1 - Impact Analysis

Aesthetics, Light, and Glare

This alternative would develop 1,237 dwelling units on 250 acres. The approximately 50-acre remainder of the developable portion of the project site would remain in agricultural production. Although the proposed project's aesthetic, light, and glare impacts were found to be less than significant after the implementation of mitigation in form of design guidelines that concern building design, landscaping, streetscapes, and light, this alternative would disturb less acreage and develop fewer dwelling units, which would reduce the severity of its impacts. Therefore, this alternative would have fewer impacts on aesthetics, light, and glare than the proposed project.

Agricultural Resources

This alternative would develop 1,237 dwelling units on 250 acres. The approximately 50-acre remainder of the developable portion of the project site would remain in agricultural production. The proposed project was found to have a significant unavoidable impact as a result of converting approximately 300 acres of Important Farmland to non-agricultural use. In contrast, this alternative would convert 250 acres of Important Farmland to non-agricultural use. Although this would not necessarily avoid a significant unavoidable impact, it would substantially lessen the severity of this impact. As with the proposed project, this alternative would result in the cancellation of an active Williamson Act contract. However, this alternative would keep an additional 50 acres encumbered by the Williamson Act contract and, therefore, would reduce the penalty associated with early cancellation of the contract. Therefore, this alternative would have fewer impacts on agricultural resources than the proposed project.

Air Quality/Greenhouse Gas Emissions

This alternative would develop 1,237 dwelling units on 250 acres. The approximately 50-acre remainder of the developable portion of the project site would remain in agricultural production. The proposed project was found to have four significant unavoidable impacts associated with air quality: air quality violations (construction and operations), air quality attainment plan consistency, cumulative air quality, and greenhouse gases. Although this alternative would not necessarily avoid these significant unavoidable impacts, it would substantially lessen the severity of all of them by reducing overall emissions. Therefore, this alternative would have fewer impacts on air quality than the proposed project.

Biological Resources

This alternative would develop 1,237 dwelling units on 250 acres. The approximately 50-acre remainder of the developable portion of the project site would remain in agricultural production. The proposed project was found to have significant impacts on special-status species, riparian habitat, wetlands, conflicts with local biological policies, and conflicts with an adopted habitat conservation plan. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage than the proposed project, it would lessen the severity of its impacts. Therefore, this alternative would have fewer impacts on biological resources than the proposed project.

Cultural Resources

This alternative would develop 1,237 dwelling units on 250 acres. The approximately 50-acre remainder of the developable portion of the project site would remain in agricultural production. The proposed project was found to have significant impacts on historical resources, archaeological resources, paleontological resources, and burial sites. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage than the proposed project, it would lessen the severity of its impacts. Therefore, this alternative would have fewer impacts on cultural resources than the proposed project.

Geology, Soils, and Seismicity

This alternative would develop 1,237 dwelling units on 250 acres. The approximately 50-acre remainder of the developable portion of the project site would remain in agricultural production. The proposed project was found to have significant impacts on seismic hazards, erosion, and unstable geologic units and soils. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage and develop fewer dwelling units than the proposed project, it would lessen the severity of its impacts. Therefore, this alternative would have fewer impacts on geology, soils, and seismicity than the proposed project.

Hazards and Hazardous Materials

This alternative would develop 1,237 dwelling units on 250 acres. The approximately 50-acre remainder of the developable portion of the project site would remain in agricultural production. The proposed project was found to have significant impacts associated with hazardous materials from past or present site usage as well as the potential for risk of upset. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage and develop fewer dwelling units than the proposed project, it would lessen the severity of its impacts. As with the proposed project, this alternative would also only be served with one point of access until the Atherton Drive extension is completed. Thus, a similar mitigation measure requiring a temporary emergency vehicle access (EVA) would be

required, which would reduce impacts to a level of less than significant. Therefore, this alternative would have fewer impacts on hazards and hazardous materials than the proposed project.

Hydrology and Water Quality

This alternative would develop 1,237 dwelling units on 250 acres. The approximately 50-acre remainder of the developable portion of the project site would remain in agricultural production. The proposed project was found to have significant impacts on short-term water quality, long-term water quality, and drainage; 100-year flood hazards; and levee failure. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage and develop fewer dwelling units than the proposed project, it would lessen the severity of its impacts. Therefore, this alternative would have fewer impacts on hydrology and water quality than the proposed project.

Land Use

This alternative would develop 1,237 dwelling units on 250 acres. The approximately 50-acre remainder of the developable portion of the project site would remain in agricultural production. The alternative would require General Plan Amendment, rezone, subdivision map, and other discretionary approvals similar to the proposed project. Similar to the proposed project, this alternative would be consistent with City of Manteca General Plan and the Manteca Municipal Code. In addition, as with the proposed project, this alternative would require mitigation for consistency with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). Therefore, this alternative would have land use impacts similar to the proposed project.

Noise

This alternative would develop 1,237 dwelling units on 250 acres. The approximately 50-acre remainder of the developable portion of the project site would remain in agricultural production. The proposed project was found to have a significant unavoidable impact associated with offsite roadway noise for which no mitigation was available. In addition, the proposed project's construction, onsite roadway, and stationary noise impacts were found to be less than significant after the implementation of mitigation. Because this alternative would disturb less acreage, develop fewer dwelling units, and would generate fewer vehicle trips than the proposed project, it would lessen the severity of all of these impacts. Therefore, this alternative would have fewer noise impacts than the proposed project.

Population and Housing

This alternative would develop 1,237 dwelling units on 250 acres. This alternative would increase the City's population by 3,663 persons, while the proposed project would increase the population by 4,886 persons. The proposed project's population growth was found to be less than significant because it was within the population growth forecasted level; therefore, this alternative would yield a similar conclusion. Therefore, this alternative would have population and housing impacts similar to the proposed project.

Public Services and Utilities

This alternative would develop 1,237 dwelling units on 250 acres. This alternative would increase demands for public services and utilities and would implement mitigation similar to the proposed project for impacts on fire protection, schools, parks, libraries, water supply, wastewater, storm drainage, and solid waste. Because this alternative would develop fewer dwelling units than the proposed project, it would reduce demands on public service and utility providers and would lessen the severity of its impacts. Therefore, this alternative would have fewer impacts on public services and utilities than the proposed project.

Transportation

Table 5-2 summarizes the trip generation for the Reduced Density Alternative. As shown in the table, this alternative would generate 3,609 fewer daily trips, 282 fewer AM peak-hour trips, and 372 fewer PM peak-hour trips. While this alternative would result in fewer trips, it would still contribute additional vehicle trips to intersections and freeway facilities that are projected to operate at unacceptable levels. Similar improvements would be implemented to mitigate this alternative's impacts on intersections and freeway facilities; however, as with the proposed project, the residual significance would be significant and unavoidable, because there is uncertainty about whether the necessary improvements would be implemented. However, the severity of impacts resulting from this alternative would be less than that of the proposed project.

Table 5-2: Reduced Density Alternative Trip Generation

Scenario	Type	Count	Daily		AM Peak		PM Peak	
			Rate	Trips	Rate	Trips	Rate	Trips
Reduced Density Alternative	Single-Family Dwelling Units	883	9.57	8,450	0.75	662	1.01	892
	Multi-Family Dwelling Units	354	6.65	2,354	0.51	181	0.62	219
	Total	1,237	—	10,804	—	843	—	1,111
Proposed Project	Total	1,650	—	14,413	—	1,125	—	1,483
Difference	**Total**	**(413)**	**—**	**(3,609)**	**—**	**(282)**	**—**	**(372)**
Source: Michael Brandman Associates, 2010.								

Similar to the proposed project, this alternative would mitigate for impacts on emergency access, alternative transportation, and construction traffic and parking, which would reduce impacts to a level of less than significant. Additionally, as with the proposed project, this alternative would not result in significant impacts on other transportation-related areas.

In summary, the Reduced Density Alternative would substantially reduce trip generation relative to the proposed project, thereby lessening its contribution to significant unavoidable traffic impacts. Therefore, this alternative would have fewer impacts on transportation than the proposed project.

5.4.2 - Conclusion

The Reduced Density Alternative would result in the same significant unavoidable impacts as the proposed project, although the severity of these impacts would be substantially lessened. In addition, this alternative would lessen the severity of other impacts, including those associated with aesthetics, light, and glare; biological resources; cultural resources; geology, soils, and seismicity; hazards and hazardous materials; hydrology and water quality; public services; and transportation.

This alternative would advance most of the project objectives—albeit to a lesser degree than the proposed project. For example, this alternative would realize the project objectives associated with job creation, capital investment, and increasing tax revenues.

5.5 - Alternative 3 – Single-Family Residential Alternative

Under the Single-Family Residential Alternative, a development consisting of only single-family detached dwelling units would be developed on the project site.

This alternative would largely maintain the proposed site layout shown in Exhibit 2-4, with the multi-family dwelling areas being converted to single-family dwelling areas. This exchange would result in a net increase in 132 additional single-family dwelling units and net decrease of 472 multi-family dwelling units. In total, this alternative would have an overall development potential of 1,300 dwelling units or 350 fewer dwelling units than the proposed project.

This alternative would require similar discretionary approvals as the proposed project, including General Plan Amendment, rezone, planned development adoption, subdivision map, development agreement, and Williamson Act cancellation.

Table 5-3 summarizes the Single-Family Residential Alternative. The intent of the Single-Family Residential Alternative is to evaluate a lower-density residential development in order to reduce trip generation and demands on public services.

Table 5-3: Single-Family Residential Alternative Summary

Scenario	Category	Figure
Single-Family Residential Alternative	Single-Family Dwelling Units	1,300
	Developed Acreage	300
Proposed Project	Single-Family Dwelling Units	1,178
	Townhomes/Garden Apartment	192
	Apartments	280
	Dwelling Units Total	1,650
	Developed Acreage	300
Difference	**Dwelling Units Total**	**(350)**
	Developed Acreage	**—**
Source: Michael Brandman Associates, 2010.		

5.5.1 - Impact Analysis

Aesthetics, Light, and Glare

This alternative would develop 1,300 single-family dwelling units on the 300-acre developable portion of the project site. The proposed project's aesthetic, light, and glare impacts were found to be less than significant after the implementation of mitigation stipulating design guidelines that concern building design, landscaping, streetscapes, and light. Because this alternative would disturb the same amount of acreage and develop a similar residential use, albeit with 350 dwelling units, it would yield a similar conclusion. Therefore, this alternative would have aesthetics, light, and glare impacts similar to the proposed project.

Agricultural Resources

This alternative would develop 1,300 single-family dwelling units on the 300-acre developable portion of the project site. The proposed project was found to have a significant unavoidable impact as a result of converting approximately 300 acres of Important Farmland to non-agricultural use. Because this alternative would convert the same acreage to non-agricultural use, it would have a similar finding. In addition, this alternative would result in the cancellation of the same active Williamson Act contract, which would found to be less than significant after mitigation. Therefore, this alternative would have agricultural resources impacts similar to the proposed project.

Air Quality/Greenhouse Gas Emissions

This alternative would develop 1,300 single-family dwelling units on the 300-acre developable portion of the project site. The proposed project was found to have four significant unavoidable impacts associated with air quality: air quality violations (construction and operations), air quality attainment plan consistency, cumulative air quality, and greenhouse gas emissions. Although this alternative would not necessarily avoid these significant unavoidable impacts, it would substantially lessen the severity of all of them by reducing overall emissions. Therefore, this alternative would have fewer impacts on air quality than the proposed project.

Biological Resources

This alternative would develop 1,300 single-family dwelling units on the 300-acre developable portion of the project site. The proposed project was found to have significant impacts on special-status species, riparian habitat, wetlands, conflicts with local biological policies, and conflicts with an adopted habitat conservation plan. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb the same amount of acreage as the proposed project, it would result in similar impacts. Therefore, this alternative would have biological resource impacts similar to the proposed project.

Cultural Resources

This alternative would develop 1,300 single-family dwelling units on the 300-acre developable portion of the project site. The proposed project was found to have significant impacts on historical

resources, archaeological resources, paleontological resources, and burial sites. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb the same amount of acreage as the proposed project, it would result in similar impacts. Therefore, this alternative would have cultural resources impacts similar to the proposed project.

Geology, Soils, and Seismicity

This alternative would develop 1,300 single-family dwelling units on the 300-acre developable portion of the project site. The proposed project was found to have significant impacts on seismic hazards, erosion, and unstable geologic units and soils. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb the same amount of acreage as the proposed project, it would result in similar impacts. Therefore, this alternative would have geology, soils, and seismicity impacts similar to the proposed project.

Hazards and Hazardous Materials

This alternative would develop 1,300 single-family dwelling units on the 300-acre developable portion of the project site. The proposed project was found to have significant impacts associated with hazardous materials from past or present site usage as well as the potential for risk of upset. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb the same amount of acreage as the proposed project, it would result in similar impacts. As with the proposed project, this alternative would also only be served with one point of access until the Atherton Drive extension is completed. Thus, a similar mitigation measure requiring a temporary EVA would be required, which would reduce impacts to a level of less than significant. Therefore, this alternative would have hazards and hazardous materials similar to the proposed project.

Hydrology and Water Quality

This alternative would develop 1,300 single-family dwelling units on the 300-acre developable portion of the project site. The proposed project was found to have significant impacts on short-term water quality, long-term water quality, and drainage; 100-year flood hazards; and levee failure. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb the same amount of acreage as the proposed project, it would result in similar impacts. Therefore, this alternative would have hydrology and water quality impacts similar to the proposed project.

Land Use

This alternative would develop 1,300 single-family dwelling units on the 300-acre developable portion of the project site. The alternative would require General Plan Amendment, rezone, subdivision map, and other discretionary approvals similar to the proposed project. Similar to the

proposed project, this alternative would be consistent with City of Manteca General Plan and the Manteca Municipal Code. In addition, as with the proposed project, this alternative would require mitigation for consistency with the SJMSCP. Therefore, this alternative would have land use impacts similar to the proposed project.

Noise

This alternative would develop 1,300 single-family dwelling units on the 300-acre developable portion of the project site. The proposed project was found to have a significant unavoidable impact associated with offsite roadway noise for which no mitigation was available. In addition, the proposed project's construction, onsite roadway, and stationary noise impacts were found to be less than significant after the implementation of mitigation. Because this alternative would develop fewer dwelling units, and would generate fewer vehicle trips than the proposed project, it would lessen the severity of the roadway noise impacts. Therefore, this alternative would have fewer noise impacts than the proposed project.

Population and Housing

This alternative would develop 1,300 single-family dwelling units on the 300-acre developable portion of the project site. This alternative would increase the City's population by 3,849 persons, while the proposed project would increase the population by 4,886 persons. The proposed project's population growth was found to be less than significant because it was within the population growth forecasted level; therefore, this alternative would yield a similar conclusion. Therefore, this alternative would have population and housing impacts similar to the proposed project.

Public Services and Utilities

This alternative would develop 1,300 single-family dwelling units on the 300-acre developable portion of the project site. This alternative would increase demands for public services and utilities and would implement mitigation similar to the proposed project for impacts on fire protection, schools, parks, libraries, water supply, wastewater, storm drainage, and solid waste. Because this alternative would develop fewer dwelling units than the proposed project, it would reduce demands on public service and utility providers and would lessen the severity of its impacts. Therefore, this alternative would have fewer impacts on public services and utilities than the proposed project.

Transportation

Table 5-4 summarizes the trip generation for the Single-Family Residential Alternative. As shown in the table, this alternative would generate 1,972 fewer daily trips, 150 fewer AM peak-hour trips, and 170 fewer PM peak-hour trips. While this alternative would result in fewer trips, it would still contribute additional vehicle trips to intersections and freeway facilities that are projected to operate at unacceptable levels. Similar improvements would be implemented to mitigate this alternative's impacts on intersections and freeway facilities; however, as with the proposed project, the residual significance would be significant and unavoidable, because there is uncertainty about whether the

necessary improvements would be implemented. However, the severity of impacts resulting from this alternative would be less than that of the proposed project.

Table 5-4: Single-Family Residential Alternative Trip Generation

Scenario	Type	Count	Daily		AM Peak		PM Peak	
			Rate	Trips	Rate	Trips	Rate	Trips
Single-Family Residential Alternative	Single-Family Dwelling Units	1,300	9.57	12,441	0.75	975	1.01	1,313
Proposed Project	Total	1,650	—	14,413	—	1,125	—	1,483
Difference	**Total**	**(350)**	**—**	**(1,972)**	**—**	**(150)**	**—**	**(170)**

Notes:
Source: Michael Brandman Associates, 2010.

Similar to the proposed project, this alternative would mitigate for impacts on emergency access, alternative transportation, and construction traffic and parking, which would reduce impacts to a level of less than significant. Additionally, as with the proposed project, this alternative would not result in significant impacts on other transportation-related areas.

In summary, the Single-Family Residential Alternative would substantially reduce trip generation relative to the proposed project, thereby lessening its contribution to significant unavoidable traffic impacts. Therefore, this alternative would have fewer impacts on transportation than the proposed project.

5.5.2 - Conclusion

The Single-Family Residential Alternative would result in the same significant unavoidable impacts as the proposed project, although the severity of these impacts would be substantially lessened. In addition, this alternative would lessen the severity of other impacts, including those associated with noise and transportation.

This alternative would advance most of the project objectives—albeit to a lesser degree than the proposed project. For example, this alternative would realize the project objectives associated with job creation, capital investment, and increasing tax revenues.

5.6 - Environmentally Superior Alternative

The qualitative environmental effects of each alternative in relation to the proposed project are summarized in Table 5-5.

Table 5-5: Summary of Alternatives

Environmental Topic Area	No Project Alternative	Reduced Density Alternative	Single-Family Residential Alternative
Aesthetics, Light, and Glare	Less Impact	Less Impact	Similar Impact
Agricultural Resources	Less Impact	Less Impact	Similar Impact
Air Quality	Less Impact	Less Impact	Less Impact
Biological Resources	Less Impact	Less Impact	Similar Impact
Cultural Resources	Less Impact	Less Impact	Similar Impact
Geology, Soils, and Seismicity	Less Impact	Less Impact	Similar Impact
Hazards and Hazardous Materials	Less Impact	Less Impact	Similar Impact
Hydrology and Water Quality	Less Impact	Less Impact	Similar Impact
Land Use	Less Impact	Similar Impact	Similar Impact
Noise	Less Impact	Less Impact	Less Impact
Population and Housing	Less Impact	Similar Impact	Similar Impact
Public Services and Utilities	Less Impact	Less Impact	Less Impact
Transportation	Less Impact	Less Impact	Less Impact
Source: Michael Brandman Associates, 2010.			

CEQA Guidelines Section 15126(e)(2) requires an EIR to identify an environmentally superior alternative. If the No Project Alternative is the environmentally superior alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives. Note that CEQA Guidelines Section 15126(e)(3)(B) defines the "No Project Alternative" as the circumstance in which the project site remains in its existing state.

The No Project Alternative is the environmentally superior alternative, as the project site would remain in its existing condition, thereby avoiding any potentially adverse environmental impacts.

As stated above, if the No Project Alternative is environmentally superior, the EIR must also identify another environmentally superior alternative among the remaining alternatives. To determine which of the remaining alternatives is the environmentally superior alternative, Table 5-6 compares how each alternative would avoid or substantially lessen the proposed project's significant unavoidable impacts associated with agricultural resources, air quality/greenhouse gases, noise, and transportation.

Table 5-6: Comparison of Significant Unavoidable Impacts

Significant Unavoidable Impact Area	Reduced Density Alternative	Single-Family Residential Alternative
Agricultural Resources	250 acres of Important Farmland converted to non-agricultural use	300 acres of Important Farmland converted to non-agricultural use
Air Quality/ Greenhouse Gases	250 acres of ground disturbance; 1,237 dwelling units;10,804 new daily trips	300 acres of ground disturbance; 1,300 dwelling units; 12,441 new daily trips
Noise	10,804 new daily trips; 843 new AM peak-hour trips; 1,111 new PM peak-hour trips	12,441 new daily trips; 975 new AM peak-hour trips; 1,313 new PM peak-hour trips
Transportation	843 new AM peak-hour trips; 1,111 new PM peak-hour trips	975 new AM peak-hour trips; 1,313 new PM peak-hour trips
Source: Michael Brandman Associates, 2010.		

Overall, the Reduced Density Alternative achieves a substantial decrease in Important Farmland conversion, ground disturbance, dwelling units, daily trip generation, and peak hour trip generation. As such, it would lessen the severity of the proposed project's significant unavoidable agricultural, air quality/greenhouse gas, noise, and traffic impacts by the greatest degree. Therefore, the Reduced Density Alternative is the environmentally superior alternative.

5.7 - Alternatives Rejected From Further Consideration

The following alternative was initially considered, but it was rejected from further consideration for the reasons described below.

5.7.1 - Existing Land Use Designations Alternative

For projects that involve a General Plan Amendment, a common alternative is to evaluate a hypothetical development project that could occur under the existing land use designations.

In this case, the City of Manteca General Plan designates the project site as "Urban Reserve-Low density Residential" (UR-LDR), "Urban Reserve-Very Low Density Residential" (UR-VLDR), and "Open Space" (OS). The Manteca Zoning Ordinance designates the project site "Planned Employment Center (PEC)." These existing General Plan and zoning designations are inconsistent with each other; therefore, a General Plan Amendment or rezone would be necessary to reconcile this inconsistency.

Furthermore, the proposed General Plan Amendment would re-designate the project site to "Low Density Residential," "High Density Residential," and "Open Space," which are similar to the existing General Plan land use designations. As such, evaluating a hypothetical development project that could occur under the existing General Plan land use designations would not significantly differ

from the proposed project, the Reduced Density Alternative, or the Single-Family Residential Alternative.

For these reasons, an Existing Land Use Designations Alternative has been rejected from further consideration.

5.7.2 - Commercial Development Alternative

Because the existing zoning for the project consists of a non-residential designation ("Planned Employment Center"), a commercial development alternative was initially considered as a potential project alternative. However, it was rejected for the following reasons:

- **Economic Viability:** The Urban Land Institute's "Shopping Centers and Other Retail Properties" publication identifies traffic flow on adjacent roadways, visibility, and size of the site as essential attributes for a successful commercial center project. Although the project site is large enough in terms of acreage to support a shopping center, it lacks the attributes pertaining to traffic flow and visibility for the following reasons:
    - *Traffic Flow*: E. Woodward Avenue, a two-lane rural road, is the only facility that provides access to the project site. As shown in Table 3.13-1, there only 1,100 average daily trips on E. Woodward Avenue between McKinley Avenue and Galleria Drive. In contrast, Table 3.13-1indicates that there are 16,400 average daily trips on Airport Way between SR-120 and Daniels Street. This serves to indicate that there are far better locations for traffic flow in the project vicinity than the project site.
    - *Visibility*: The project site is in the southwest corner of Manteca and surrounded by existing agricultural uses to the north and east, and south, along with Walthall Slough to the southwest. As previously noted, E. Woodward Avenue is the only roadway that provides access to the project site. The project vicinity is not considered a highly visible location by virtue of its isolation from the balance of Manteca.
- **Land Use Compatibility:** The project site is surrounded by existing residential uses to the west, existing residential and agricultural uses to the north, agricultural uses to the east, and south, with Walthall Slough to the southwest. The City of Manteca contemplates future residential development on the agricultural lands to the north and east of the project site. Given these characteristics, developing a commercial development on the project site may introduce land use compatibility issues with surrounding land uses. Furthermore, it would not represent a logical pattern of development because a commercial activity center would be located in a distant corner of Manteca at the urban/rural transition.

For these reasons, a Commercial Development Alternative has been rejected from further consideration.

5.7.3 - Alternative Location

CEQA Guidelines Section 15126.6(f)(2) sets forth considerations to be used in evaluating an alternative location. The section states that the "key question" is whether any of the significant effects of the project would be avoided or substantially lessened by relocating the project. The CEQA Guidelines establishes that only locations that would accomplish this objective should be considered.

Accordingly, the following screening criteria were established for evaluating an alternative location pursuant to CEQA Guidelines Section 15126.6(f)(2):

- Be located within the Manteca city limits or sphere of influence
- Be designated for residential use by the City of Manteca General Plan
- Provide minimum acreage to allow for the development of master planned residential community containing 1,650 dwelling units (i.e., at least 200 contiguous acres)
- Be available for new residential development (e.g., not entitled for or otherwise committed to another higher-and-better use)

A review of the General Plan map and aerial photographs of the Manteca area indicates that the one site that meets all of these criteria is the site immediately north of the project site. This site is within the Manteca city limits; is designated "Low Density Residential," "Very Low Density Residential," and "High Density Residential" by the General Plan; and consists of approximately 225 acres. In addition, this site is not currently entitled for new development or proposed for new development.

Developing the proposed project on this property would not avoid any of the proposed project's significant unavoidable air quality/greenhouse gas, noise or traffic impacts, because (1) the same number of project trips would be generated, and (2) project-related trips would still use the same trip distribution patterns. As such, project-related trips would occur at the same rate as the proposed project and travel on the same roadways and, therefore, yield similar, if not identical, significant unavoidable impacts as it relates to these topical areas.

Additionally, this location would not change the conclusion about Important Farmland conversion being a significant unavoidable impact, although it would lessen the severity of this impact through the reduction in converted acreage. Note that the Reduced Density Alternative reduced the amount of Important Farmland conversion and the number of dwelling units (and ultimately trip generation), thereby providing an alternative that lessened the severity of this and other significant unavoidable impacts. As such, this EIR has considered a project alternative that would be more environmentally beneficial than this alternative project location.

In summary, this alternative location would not meet the CEQA Guidelines objective of avoiding or substantially lessening the proposed project's significant effects and, therefore, has been rejected from further consideration.

SECTION 6: OTHER CEQA CONSIDERATIONS

6.1 - Significant Unavoidable Impacts

CEQA Guidelines Section 15126.2(a)(b) requires an EIR to identify and focus on the significant environmental effects of the proposed project, including effects that cannot be avoided if the proposed project were implemented.

This section describes significant impacts, including those that can be mitigated but not reduced to a level of less than significant. Where there are impacts that cannot be alleviated without imposing a project alternative, their implications, and the reason why the project is being proposed, notwithstanding their effect, is described. With implementation of the proposed project, eight significant impacts that cannot be avoided would occur. Each significant unavoidable impact is discussed below.

- **Important Farmland:** The proposed project would convert Important Farmland to non-agricultural use. Although mitigation is proposed that would require the applicant to pay the City of Manteca's agricultural mitigation fee, it would not fully mitigate the impact to a level of less than significant. Therefore, the residual significance of this impact is significant and unavoidable.
- **Air Quality Violations – Construction and Operational Emissions:** Construction and operational emissions would exceed San Joaquin Valley Air Pollution Control District (SJVAPCD) thresholds. Mitigation is proposed requiring the implementation of feasible emissions reduction measures; however, these measures would not reduce emissions to below SJVAPCD thresholds. Therefore, the residual significance of this impact is significant and unavoidable.
- **Air Quality Attainment Plan Consistency:** Because construction and operational emissions would exceed SJVAPCD, they would be inconsistent with the agency's regional quality planning assumptions. Mitigation is proposed requiring the implementation of feasible emissions reduction measures; however, these measures would not reconcile this inconsistency. Therefore, the residual significance of this impact is significant and unavoidable.
- **Cumulative Air Quality:** Because project emissions result in a significant unavoidable air quality impact associated with air quality violations and air quality attainment plan consistency, a significant unavoidable cumulative air quality impact would occur.
- **Greenhouse Gas Emissions:** Construction and operational greenhouse gas emissions would exceed SJVAPCD thresholds. Mitigation is proposed requiring the implementation of feasible emissions reduction measures; however, these measures would not reduce emissions to below SJVAPCD thresholds. Therefore, the residual significance of this impact is significant and unavoidable.

- **Offsite Roadway Noise:** The proposed project's vehicle trips would contribute to offsite roadway noise levels that exceed acceptable noise exposure standards for adjoining land uses. No feasible mitigation is available to mitigate this impact. Therefore, the residual significance of this impact is significant and unavoidable.
- **Existing Plus Project Traffic:** The proposed project would generate vehicle trips that would contribute to unacceptable intersection under Existing Plus Project conditions. Mitigation is proposed that would require the applicant to contribute fees to fund necessary improvements; however, there is uncertainty regarding actual implementation of the improvements. As such, the residual significance of this impact is significant and unavoidable.
- **Cumulative Traffic:** The proposed project would generate vehicle trips that would contribute to unacceptable intersection and freeway operations under Cumulative conditions. Mitigation is proposed that would require the applicant to contribute fees to fund necessary improvements; however, there is uncertainty regarding actual implementation of the improvements. As such, the residual significance of this impact is significant and unavoidable.

6.2 - Growth-Inducing Impacts

There are two types of growth-inducing impacts that a project may have: direct and indirect. To assess the potential for growth-inducing impacts, the project's characteristics that may encourage and facilitate activities that individually or cumulatively may affect the environment must be evaluated (CEQA Guidelines Section 15126.2(d)).

Direct growth-inducing impacts occur when the development of a project imposes new burdens on a community by directly inducing population growth, or by leading to the construction of additional developments in the same area. Also included in this category are projects that remove physical obstacles to population growth (such as a new road into an undeveloped area or a wastewater treatment plant with excess capacity that could allow additional development in the service area). Construction of these types of infrastructure projects cannot be considered isolated from the development they facilitate and serve. Projects that physically remove obstacles to growth, or projects that indirectly induce growth may provide a catalyst for future unrelated development in an area such as a new residential community that requires additional commercial uses to support residents.

Direct Population Growth

The proposed project would cause direct population growth by constructing 1,650 residential units. Table 6-1 summarizes the population growth attributable to the proposed project. As shown in the table, the proposed project is expected to increase the City's population by 4,886 persons.

Table 6-1: Project-Related Population Growth

Dwelling Units	Average Household Size	Population Growth
1,650	2.961	4,886
Source: Michael Brandman Associates, 2010.		

Table 6-2 compares the proposed project's population growth with those provided by San Joaquin Council of Governments (SJCOG) and the Growth Management Ordinance between 2010 and 2020. Although this Draft EIR assumes that the proposed project will be completed by 2013, as a practical matter, the project would likely be phased over a number of years and not fully occupied within 12 months. Therefore, to provide an accurate representation of population growth, a 10-year period has been used.

Table 6-2: Growth Projections (2010 to 2020)

Year	SJCOG Projections	Growth Management Ordinance
2010	64,248	74,766
2015	71,622	90,528
2020	77,699	109,613
Net Increase	**13,451**	**34,847**
Proposed Project Population Growth	4,886	
Percent of Growth Projections	36.3	14.0
Notes: SJCOG population growth projections shown in Table 3.11-4 in Section 3.11, Population and Housing. Growth Management Ordinance growth projections shown in Table 3.11-5 in Section 3.11, Population and Housing. Source: Michael Brandman Associates, 2010.		

As shown in the table, the population growth attributable to the proposed project would represent between 14.0 and 36.3 percent of the forecasted growth between 2010 and 2020 by these two sources. Because the proposed project's population growth figures are within the growth projections provided by these two sources, it can be concluded that the proposed project would be considered planned growth and, therefore, not "growth inducing."

Removal of Barrier to Growth

The proposed project would result in the extension of urban infrastructure to an area that is currently not serviced. In particular, potable water and sewer service would be extended to the project site. However, this would not be considered removal of a barrier to growth, because the project site is within the city limits and is contemplated for urban development by both the General Plan and Zoning Ordinance. As such, the extension of this urban infrastructure is "growth accommodating" because it is intended to facilitate planned growth.

Furthermore, the extension of urban infrastructure to the project site would not result in unplanned growth urban occurring in nearby unincorporated areas. The City of Manteca General Plan contains two policies (PF-P-9 and PF-P-21) that specifically state that potable water and sewer service shall not be extended to unincorporated areas except in extraordinary circumstances. As such, there is a high degree of certainty that the extension of potable water and sewer service to the project site would not lead to the extension of these urban services to surrounding unincorporated areas. Impacts would be less than significant.

6.3 - Significant Irreversible Changes

The environmental effects of the proposed project are summarized in Section ES, Executive Summary, and are analyzed in detail in Section 3, Environmental Impact Analysis, of this EIR.

As mandated by the CEQA Guidelines, the EIR must address any significant irreversible environmental change that would result from implementation of the proposed project. Specifically, pursuant to the CEQA Guidelines (Section 15126.2(c)), such an impact would occur if:

- The project would involve a large commitment of nonrenewable resources;
- Irreversible damage can result from environmental accidents associated with the project; and
- The proposed consumption of resources is not justified (e.g., the project results in the wasteful use of energy).

Development of the proposed project would result in an irretrievable commitment of non-renewable resources such as energy supplies and other construction-related materials. The energy resource demands would be used for construction, heating, and cooling of buildings, transportation of people and goods, heating and refrigeration, lighting, and other associated energy needs. However, the proposed project would implement a number of design features and mitigation measures that would reduce energy demand, water consumption, wastewater generation, and solid waste generation that would collectively reduce the demand for resources. This would result in the emission and generation of less pollution and effluent and lessen the severity of corresponding environmental effects. Although the proposed project would result in an irretrievable commitment of non-renewable resources, the commitment of these resources would not be significantly inefficient, unnecessary, or wasteful.

The proposed project would develop residential uses within a 300-acre area. The residential uses would consist of single-family and multi-family dwelling units. None of these uses would handle large quantities of hazardous materials or engage in activities that have the potential to result in serious environmental accidents (chemical manufacturing, mineral extraction, refining, etc.). As such, the proposed project would not have the potential to cause serious environmental accidents.

The proposed project would result in greater demand for resources such as energy and water; however, such consumption would not be unusually high or disproportionate relative to similar land uses (refer to Section 3.12, Public Services and Utilities for further discussion). The proposed project would implement a number of design features and mitigation measures to reduce energy and water consumption. These design features and mitigation measures exceed state and local requirements for energy and water conservation and demonstrate that the proposed project's consumption would not be unjustified.

6.4 - Energy Conservation

Public Resources Code Section 21100(b)(3) and CEQA Guidelines Section 15126.4 require EIRs to describe, where relevant, the wasteful, inefficient, and unnecessary consumption of energy caused by a project. In 1975, largely in response to the oil crisis of the 1970s, the State Legislature adopted AB 1575, which created the California Energy Commission (CEC). The statutory mission of the CEC is to forecast future energy needs, license thermal power plants of 50 megawatts or larger, develop energy technologies and renewable energy resources, plan for and direct state responses to energy emergencies, and—perhaps most importantly—promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code Section 21100(b)(3) to require EIRs to consider the wasteful, inefficient, and unnecessary consumption of energy caused by a project. Thereafter, the State Resources Agency created Appendix F of the CEQA Guidelines. Appendix F is an advisory document that assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. For the reasons set forth below, this EIR concludes that the proposed project will not result in the wasteful, inefficient, and unnecessary consumption of energy, will not cause the need for additional natural gas or electrical energy-producing facilities, and, therefore, will not create a significant impact on energy resources.

6.4.1 - Regulatory Setting

Federal and state agencies regulate energy use and consumption through various means and programs. At the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency are three agencies with substantial influence over energy policies and programs. Generally, federal agencies influence and regulate transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through funding of energy-related research and development projects, and through funding for transportation infrastructure improvements. At the state level, the California Public Utilities Commission (CPUC) and the CEC are two agencies with authority over different aspects of energy. The CPUC regulates privately owned utilities in the energy, rail, telecommunications, and water fields. The CEC collects and analyzes energy-related data, prepares statewide energy policy recommendations and plans, promotes and funds energy efficiency programs, and adopts and enforces appliance and building energy efficiency standards.

California is exempt under federal law from setting state fuel economy standards for new on-road motor vehicles. Some of the more relevant federal and state energy-related laws and plans are discussed below.

Federal Energy Policy and Conservation Act

The Federal Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the United States Department of Transportation, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 miles per gallon. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per gallon. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is not determined for each individual vehicle model; rather, compliance is determined on the basis of each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. The Corporate Average Fuel Economy (CAFE) program, which is administered by United States Environmental Protection Agency, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The United States Environmental Protection Agency calculates a CAFE value for each manufacturer, based on city and highway fuel economy test results and vehicle sales. On the basis of the information generated under the CAFE program, the United States Department of Transportation is authorized to assess penalties for noncompliance. In the course of its over 30-year history, this regulatory program has resulted in vastly improved fuel economy throughout the nation's vehicle fleet.

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs) such as ABAG were required to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process for specific projects would then address these policies. Another requirement was to consider the consistency of transportation planning with federal, State, and local energy goals. Through this requirement, energy consumption was expected to become a decision criterion, along with cost and other values that determine the best transportation solution.

The Transportation Equity Act for the 21st Century (TEA-21)

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including providing assistance to public agencies and fleet operators, encouraging urban designs that reduce vehicle miles traveled, and accommodating pedestrian and bicycle access.

Title 24, Energy Efficiency Standards

Title 24, which was promulgated by the CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption, provides energy efficiency standards for residential and nonresidential buildings. According to the CEC, since the energy efficiency standards went into effect in 1978, it is estimated that California residential and nonresidential consumers have reduced their utility bills by at least $15.8 billion. The CEC further estimates that by 2011, residential and nonresidential consumers will save an additional $43 billon in energy costs.

In 2008, the CEC adopted new energy efficiency standards. Effective January 1, 2010, all projects that apply for a building permit must adhere to the new 2008 standards. The 2008 standards reflect the greenhouse gas reduction requirements of the California Global Warming Solutions Act of 2006 (Assembly Bill 32).

Because the adoption of Title 24 post-dates the adoption of AB 1575, it has generally been the presumption throughout the State that compliance with Title 24 (as well as compliance with the federal and state regulations discussed above) ensures that projects will not result in the inefficient, wasteful, and unnecessary consumption of energy. As is the case with other uniform building codes, Title 24 is designed to provide certainty and uniformity throughout the State while ensuring that the efficient and non-wasteful consumption of energy is carried out through design features. Large

infrastructure transportation projects that cannot adhere to Title 24 design-build performance standards may, depending on the circumstances, undertake a more involved assessment of energy conservation measures in accordance with some of the factors set forth in Appendix F of the CEQA Guidelines. As an example, pursuant to the California Department of Transportation CEQA implementation procedures and FHWA Technical Advisory 6640.8A, a detailed energy study is generally only required for large-scale infrastructure projects. However, for the vast majority of residential and nonresidential projects, adherence to Title 24 is deemed necessary to ensure that no significant impacts occur from the inefficient, wasteful, and unnecessary consumption of energy. As a further example, the adoption of federal vehicle fuel standards, which have been continually improved since their original adoption in 1975, have also protected against the inefficient, wasteful, and unnecessary use of energy.

Pursuant to the California Building Standards Code and the Title 24 Energy Efficiency Standards, the City will review the design and construction components of the project's Title 24 compliance when specific building plans are submitted.

6.4.2 - Energy Requirements of the Proposed Project

Short-term construction and long-term operational energy consumption are discussed below.

Short-Term Construction

The EPA regulates non-road diesel engines. The EPA has no formal fuel economy standards for non-road (e.g., construction) diesel engines but does regulate diesel emissions, which indirectly affects fuel economy. In 1994, the EPA adopted the first set of emissions standards (Tier 1) for all new non-road diesel engines greater than 37 kilowatts (kW) (50 horsepower [hp]). The Tier 1 standards were phased in for different engine sizes between 1996 and 2000, reducing nitrogen oxide (NO_x) emissions from these engines by 30 percent. The EPA has since adopted more stringent emission standards for NO_x, hydrocarbons, and particulate matter from new, non-road diesel engines. This program includes the first set of standards for non-road diesel engines less than 37 kW. It also phases in more stringent Tier 2 emission standards from 2001 to 2006 for all engine sizes and adds yet more stringent Tier 3 standards for engines between 37 and 560 kW (50 and 750 hp) from 2006 to 2008. These standards will further reduce non-road diesel engine emissions by 60 percent for NO_x and 40 percent for particulate matter (PM) from Tier 1 emission levels. In 2004, the EPA issued the Clean Air Non-road Diesel Rule. This rule, which took effect in 2008 and will be fully phased in by 2014, will cut emissions from non-road diesel engines by more than 90 percent. These emission standards are intended to promote advanced clean technologies for non-road diesel engines that improve fuel combustion, but they also result in slight decreases in fuel economy.

Table 6-3 provides estimates of the project project's construction fuel consumption. The construction assumptions contained in the tables are the same assumptions used in the construction air quality analysis in Section 3.3, Air Quality.

Table 6-3: Construction Fuel Consumption

Phase	Fuel Consumption (gallons)
Demolition	26,540
Grading	171,333
Building	4,052,556
Paving	25,921
Total	**4,276,348**
Source: Michael Brandman Associates, 2010.	

As shown in Table 6-3, construction activities associated would be estimated to consume 4,276,348 gallons of diesel or gasoline. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the State. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Long-Term Operations

Transportation Energy Demand

Vehicle fuel efficiency is regulated at the federal level. Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic and Safety Administration is responsible for establishing additional vehicle standards and for revising existing standards.

The fuel economy standard for new passenger cars has been 27.5 miles per gallon since 1990. The fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per gallon since 1996. Heavy-duty vehicles (vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is not determined for each individual vehicle model; rather, compliance is determined by each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

Table 6-4 provides an estimate of the daily fuel consumed by vehicles traveling to and from the proposed project. These estimates were derived using the same assumptions used in the operational air quality analysis in Section 3.3, Air Quality. As shown in Table 6-4, daily vehicular fuel consumption is estimated to be 11,272 gallons of both gasoline and diesel.

Table 6-4: Daily Vehicle Fuel Consumption

Vehicle Type	Percent of Vehicle Trips	Daily Vehicle Miles Traveled	Average Fuel Economy	Total Daily Fuel Consumption
Passenger cars	42.5	65,444	21.6	3,030
Light trucks	33.2	51,124	17.2	2,972
Medium trucks/ Heavy trucks/Other	20.4	31,414	6.1	5,150
Motorcycles	3.9	6,005	50.0	120
Total	**100.0**	**153,987**	**—**	**11,272**

Notes:
Daily trips and vehicle miles traveled provided by URBEMIS air quality modeling output (Appendix C).
Average fuel economy is provided by United States Department of Transportation, Bureau of Transportation Statistics and reflects fuel economy of overall fleet, not just new vehicles.
"Other" consists of buses and motor homes.
Source: Michael Brandman Associates, 2010.

Building Energy Demand

The proposed project's dwelling units are estimated to demand 11.5 million kilowatt-hours (kWh) of electricity and 79.2 million cubic feet of natural gas on an annual basis. These figures were derived from energy consumption rates provided by the latest Pacific Gas and Electric Company 10-K Annual Report. Refer to Impact PSU-10 in Section 3.12, Public Services and Utilities for further discussion about the calculations used to arrive at these consumption estimates, as well as a discussion on local and regional energy supplies and requirements for additional capacity, the effects of the project on energy resources, and the effects of the project on peak demand periods.

Mitigation Measure AIR-1e requires that the proposed project's dwelling units exceed the latest adopted Title 24 energy efficiency standards by a minimum 10 percent. This would ensure that the proposed project's dwelling units would be more energy efficient relative to those that simply meet, but do not exceed, Title 24 energy efficiency standards.

As such, the proposed project would not result in the inefficient, wasteful, or unnecessary use of energy.

SECTION 7: EFFECTS FOUND NOT TO BE SIGNIFICANT

7.1 - Introduction

This section is based on the Notice of Preparation (NOP), dated July 15, 2010, and contained in Appendix A of this Environmental Impact Report (EIR). The NOP was prepared to identify the potentially significant effects of the proposed projects and was circulated for public review between July 15, 2010 and August 13, 2010. In the course of this evaluation, certain impacts were found to be less than significant because the proposed project's characteristics would not create such impacts. This section provides a brief description of effects found not to be significant or less than significant, based on the NOP comments or more detailed analysis conducted as part of the EIR preparation process. Note that a number of impacts that are found to be less than significant are addressed in the various EIR topical sections (Sections 3.1 through 3.13) to provide more comprehensive discussion of why impacts are less than significant, in order to better inform decision makers and the general public.

7.2 - Effects Found Not To Be Significant

7.2.1 - Aesthetics, Light, and Glare

State Scenic Highways

Interstate 580 is the only officially designated State Scenic Highway in San Joaquin County. This highway is more than 10 miles from the project site. This condition precludes the possibility of any adverse impact on a State Scenic Highway as a result of project implementation. No impact would occur.

7.2.2 - Agriculture Resources

Forest Land Zoning

The project site is currently zoned "Planned Employment Center" by the Manteca Zoning Ordinance, a non-forestland zoning designation. This condition precludes the possibility of conflicts with forest land zoning as a result of project implementation. No impacts would occur.

Forest Lands

The project site contains agricultural uses, including orchards. Orchards do not meet state criteria for classification as "forestlands" or "timberlands." This condition precludes the possibility of conversion of forest land to non-forest use as a result of project implementation. No impacts would occur.

7.2.3 - Geology, Soils, and Seismicity

Septic or Alternative Wastewater Disposal Systems

The proposed project would be served by sanitary sewer service provided by the City of Manteca. No septic or alternative wastewater disposal systems would be installed as part of the proposed project. No impacts would occur.

7.2.4 - Hazards and Hazardous Materials

Exposure of Schools to Hazardous Materials

There are no existing schools within 0.25 mile of the project area. The nearest school to the project site is Nile Garden Elementary School, located 2 miles to the east. This condition precludes the possibility of the proposed project exposing schools located within 0.25 mile of the project site to hazardous materials. No impacts would occur.

Airports

The nearest airport to the project site is the New Jerusalem Airport, located approximately 6 miles to the south. The project site is not within the boundaries of the New Jerusalem Airport Influence Area. This condition precludes the possibility of the proposed project increasing aviation safety risks for persons residing or working in the project area. No impacts would occur.

Private Airstrips

There are no private airstrips in the project area vicinity. This condition precludes the possibility of exposing persons residing or working in the project area to aviation hazards associated with private airstrips. No impacts would occur.

Wildland Fires

The project area is surrounded by parcels containing both urban development and agricultural uses. Cal Fire maps indicate that San Joaquin County has no Very High Fire Hazard Severity Zones. In addition, the City of Manteca General Plan does not identify any areas within its planning boundaries as having wildland fire risks. Therefore, development of the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. No impacts would occur.

7.2.5 - Hydrology and Water Quality

Seiches, Tsunamis, or Mudflows

There are no inland water bodies that could be potentially susceptible to a seiche in the project vicinity. This precludes the possibility of a seiche inundating the project site. The project area is more than 65 miles from the Pacific Ocean, a condition that precludes the possibility of inundation by tsunami. There are no steep slopes that would be susceptible to a mudflow in the project vicinity, nor are there any volcanically active features that could produce a mudflow in the City of Manteca. This precludes the possibility of a mudflow inundating the project site. No impacts would occur.

7.2.6 - Mineral Resources

Mineral Resources of Statewide or Local Importance

The project area does not contain any known mineral deposits or active mineral extraction operations. According to the City of Manteca General Plan, there are no significant mineral resources within the planning area, and no known mining of mineral resources has occurred in the planning area. The closest mineral resources consist of clay pits located northeast of the City of Lathrop. This condition precludes the possibility of the loss of important mineral resources as a result of the proposed project.

7.2.7 - Noise

Aviation Noise

The nearest airport to the project site is the New Jerusalem Airport, located approximately 6 miles to the south. The project site is not within the boundaries of the New Jerusalem Airport Influence Area. This condition precludes the possibility of the proposed project exposing persons residing or working in the project area to excessive aviation noise. No impacts would occur.

7.2.8 - Transportation

Air Traffic Patterns

The nearest airport to the project site is the New Jerusalem Airport, located approximately 6 miles to the south. This distance precludes the possibility of the proposed project altering aviation patterns or creating aviation hazards. No impacts would occur.

SECTION 8: PERSONS AND ORGANIZATIONS CONSULTED/LIST OF PREPARERS

8.1 - Persons and Organizations Consulted

8.1.1 - Lead Agency

City of Manteca

Community Development Department

Interim Community Development Director ..... Frederic Clark
Planning Manager..... Mark Meissner
Senior Planner ..... Erika Durrer

Fire Department

Fire Chief..... Kirk Waters
Fire Marshall ..... Lantz Rey

Police Department

Captain, Patrol Division Commander..... Charlie Goeken

Public Works Department

Senior Engineer - Water ..... Keith Conarroe

8.1.2 - Public Agencies

Federal Agencies

United States Army Corps of Engineers, Sacramento District

Chief California Delta Branch..... Kathleen A. Dadey, Ph.D

State Agencies

California Department of Transportation, District 10

Chief, Office of Metropolitan Planning..... Tom Dumas

Department of California Highway Patrol

Commander, Stockton Area ..... J.E. Dial

Department of Toxic Substances Control

Hazardous Substances Scientist ..... Tim Miles

Regional and Local Agencies

County of San Joaquin Environmental Health Department

Lead Senior Environmental Registered Health Specialist..... Rodney Estrada

San Joaquin Valley Air Pollution Control District

Permit Services Manager..... Arnaud Marjollet
Director of Permit Services ..... David Warner

Manteca Unified School District

Director of Facilities ..... Michael Garr

Reclamation District 2096

Representative ..... Chuck McCabe

8.1.3 - Private Parties and Organizations

Pacific Gas and Electric Company

Senior New Business Representative ..... Jim Wirowek

Individuals

Eileen Young

Robert Young

8.2 - List of Preparers

8.2.1 - Lead Agency

City of Manteca

Community Development Department

Interim Community Development Director ..... Frederic Clark

Planning Manager ..... Mark Meissner

Senior Planner ..... Erika Durrer

8.2.2 - Lead Consultant

Michael Brandman Associates

Project Director ..... Jason M. Brandman

Project Manager ..... Grant Gruber

Assistant Project Manager ..... Elena Nuño

Air Quality Scientist ..... Cori Wilson

Air Quality Scientist ..... Vince Mirabella

Senior Noise Analyst ..... Gregory Tonkovich, AICP, INCE

Senior Project Archaeologist ..... Carrie Wills, RPA

Environmental Analyst ..... Tina Garg

Biologist ..... Paul Mead

Hydrologist ..... Carol Beahan

Senior Editor ..... Sandra L. Tomlin

Technical Editor/Word Processor ..... Ed Livingston

GIS Technician ..... Karlee McCracken

Executive Assistant ..... Jayne Ingram

Administrative Assistant ..... Alicia Yuen

Reprographics ..... José Morelos

Reprographics ..... Cole Forbes

8.2.3 - Technical Subconsultants

Fehr & Peers Transportation Consultants

Principal..... John Gard, P.E.
Transportation Engineer..... Katie Spangler

8.3 - Applicant's Consultants

8.3.1 - Terrasearch, Inc.

Vice President.....Simon Makdessi, P.E., G.E.
Senior Engineer.....Kamran Ghiassi, PhD., P.E.
Environmental Specialist..... A. Wakil Mateen, R.E.A. I

8.3.2 - ENGEO, Inc.

Principal.....Josef J. Tootle, G.E.
Hydrologist..... Matthew E. Swanson

8.3.3 - Moore Biological Consultants

Principal Biologist..... Diane S. Moore, M.S.

8.3.4 - Basin Research Associates, Inc.

Principal..... Colin I. Busby, PhD, R.P.A.

SECTION 9: REFERENCES

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