Draft Environmental Impact Report

Austin Road Business Park and Residential Community

State Clearinghouse Number
2009012044

Prepared for:

The City of Manteca
Community Development Department
1001 W. Center Street
Manteca, CA 95337

Prepared by:

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1200 2nd Street
Sacramento CA 95814

April 2010

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1. INTRODUCTION

1.0 INTRODUCTION

PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

This Draft Environmental Impact Report (DEIR) has been prepared in conformance with the California Environmental Quality Act (CEQA) of 1970 (as amended) to evaluate the environmental impacts associated with the development of the Austin Road Business Park and Residential Community (ARBPRC). The project applicant is seeking approval of the following discretionary actions: amendment to the City of Manteca General Plan land use diagram; prezoning; Master Plan, Development Agreement; and annexation. The City of Manteca is the lead agency under CEQA for the preparation of this EIR.

CEQA requires the preparation of an EIR when there is substantial evidence that a project could have a significant effect on the environment. The purpose of an EIR is to provide decision makers, public agencies, and the general public with an objective and informational document that fully discloses the potential environmental effects of the proposed project. The term "proposed project," as used in this EIR, refers to the development of the ARBPRC, as well as improvements outside of the ARBPRC area needed to serve the project area. The EIR process is specifically designed to describe the objective evaluation of potentially significant direct, indirect, and cumulative impacts of the proposed project; to identify alternatives that reduce or eliminate the project's significant effects; and to identify feasible measures that mitigate significant effects of the project. In addition, CEQA requires that an EIR identify those adverse impacts determined to remain significant after mitigation.

Background

In accordance with CEQA regulations, the City released a Notice of Preparation (NOP) on January 16, 2009, with a comment period from January 16, 2009 to February 18, 2009. The City distributed the NOP to responsible agencies, interested parties and organizations, as well as private organizations and individuals that have stated an interest in the project. The purpose of the NOP was to provide notification that an EIR for the project was being prepared and to solicit guidance on the scope and content of the document. A copy of the NOP and public and agency responses to the NOP are included in Appendix B of this DEIR in accordance with CEQA. The City held a scoping meeting on February 5, 2009. There were no public or agency comments submitted at the scoping meeting.

The DEIR is being circulated for public review and comment for a period of 45 days. During this period, members of the general public, organizations, and agencies can submit comments on the DEIR's accuracy and completeness to the lead agency. The 45-day public review period will be from **April 12, 2010** through **May 27, 2010**. Written comments must be received by 5:00 p.m. on **May 27, 2010** at the following address:

Rochelle Henson, Senior Planner - rhenson@ci.manteca.ca.us
Erika Durrer, Senior Planner - edurrer@ci.manteca.ca.us

City of Manteca
1001 W. Center Street
Manteca, CA 95337
(209) 825-1830 Office
(209) 825-2349 Fax

Interested parties can view the DEIR at the following locations:

Manteca City Clerk
1001 W. Center Street
Manteca, CA 95337

City of Manteca Community Development Department
1001 W. Center Street
Manteca, CA 95337

Manteca Branch Library
Stockton-San Joaquin County Public Library
320 W. Center Street
Manteca, CA 95336

A public comment meeting will be held on the DEIR for this project during the 45-day public review period. The comment meeting will be held at 7 pm on April 27, 2010 in the City Council Chambers at 1001 West Center Street, Manteca, CA 95337. Upon completion of the public review period, a Final EIR (FEIR) will be prepared that will include both written and oral comments on the DEIR received during the public review period and responses to those comments. The FEIR will address any revisions to the DEIR made in response to public comments. The DEIR and FEIR will comprise the EIR for the proposed project.

Before the lead agency can approve the project, the agency must certify that the EIR has been completed in compliance with CEQA, that the decision-making body has reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the lead agency.

In the event that the City Council approves the proposed project, written findings of fact will be prepared and adopted in which the City Council identifies all significant effects and adopts mitigation measures. In the findings of fact, the City Council may, if it so chooses, reject mitigation measures and/or alternatives, and provide a written explanation of its reasons for doing so. (See Pub. Resources Code, Section 21081, subd. (a); CEQA Guidelines, Section 15091, subd. (a).) If the City Council chooses to approve a project that would result in a significant unavoidable impact, it must adopt a statement of overriding considerations, which must explain the benefits of the project that, on balance, have caused the City Council to choose to accept a significant adverse environmental impact.

LEAD AGENCY

The City of Manteca is the lead agency for preparation of the ARBPRC environmental analysis. In conformance with sections 15050 and 15367 of the State CEQA Guidelines, the City of Manteca has been designated the "lead agency" which is defined as the "public agency which has the principal responsibility for carrying out or disapproving a project."

Required Discretionary Actions

The City of Manteca would be required to certify that the EIR adequately identifies the significant environmental effects of the proposed project, pursuant to CEQA, the State CEQA Guidelines, and the City of Manteca CEQA Guidelines. The project applicant is seeking approval of the following City entitlements, approvals, actions, and/or permits:

- Certification of the EIR and Mitigation Monitoring Plan
- General Plan Amendments
- Prezone
- Annexation
- Master Plan
- Development Agreement

Other Agency Approvals

In addition to the approvals identified above that must be obtained from the City, the following approvals and/or permits may be required from other agencies, including various "responsible agencies" as defined by CEQA. This EIR has been designed to provide information to these agencies to assist them in the permitting processes for the proposed project. Technically, no federal agency can be a "responsible agency" within the meaning of CEQA, as federal agencies are beyond the reach of state law, which does impose various duties on responsible agencies. Even so, various federal agencies, discussed below, may use the analysis in this document in order to assist with the preparation of their own analyses required by federal law.

- **Construction Storm Water Discharge Permit** (State Water Resources Control Board [SWRCB])

  Construction would involve clearing, grading, and excavation activities that would result in the disturbance of one acre or more of land. As such, the project applicant would be required to obtain a SWRCB General Construction permit for stormwater discharge from construction sites. The permit process would include development of a Stormwater Pollution Prevention Plan (SWPPP) and identification of Best Management Practices (BMPs) to control pollutants in stormwater discharges both during construction and after construction is completed.

- **Hazardous Materials Environmental Oversight**

  Any environmental problems relating to hazardous materials detected on the project site may require oversight by the appropriate governmental agency (e.g., Department of Toxic Substances Control, County Division of Environmental Health Services). It would be the responsibility of the project applicant to contact the appropriate agency in the event any potential hazardous materials are identified before or during project construction.

- **Reorganization (Annexations/Detachments)** (Local Agency Formation Commission [LAFCO])

  The project site would require annexation into the City of Manteca. LAFCO would use this EIR for their review and approval. This document could be used to make findings for the annexation.

- **Implementation of the San Joaquin Multi-Species Habitat Conservation and Open Space Plan** (San Joaquin Council of Governments)

- **Authority to construct and permit to operate** (San Joaquin Valley Air Pollution Control District)

USE OF THIS EIR

This EIR is a "Project EIR," pursuant to section 15161 of the CEQA Guidelines, for all project components, including off-site infrastructure. A Project EIR examines the environmental impacts of a specific project. This type of EIR focuses on the changes in the environment that would result from implementation of the project, including construction and operation.

How to Use this Report

This report includes seven principal parts: Project Description, Summary of Impacts and Mitigation Measures, Land Use and Planning, Environmental Analysis (Setting, Impacts, and Mitigation Measures), Alternatives, and CEQA Considerations.

The **Project Description** (Chapter 2) describes the location of the project, the project background, existing conditions on the project site, and the nature and location of specific elements of the proposed project that are proposed for construction.

The **Summary of Impacts and Mitigation Measures** (Chapter 3) presents an overview of the results and conclusions of the environmental evaluation. This section identifies impacts of the proposed project and available mitigation measures.

Land Use and Planning (Chapter 4) addresses the land use and planning implications of the project and discusses consistency with land use policies.

The **Environmental Analysis** (Chapter 5) includes a topic-by-topic analysis of impacts that would or could result from implementation of the proposed project or alternatives. Topics discussed are those

identified in the Initial Study Checklist as requiring further analysis (see Appendix A). The analysis is organized in 10 topical sections. Each section is organized into two major subsections: Setting (existing conditions), and Impacts and Mitigation Measures, including cumulative impacts and mitigation measures.

Alternatives (Chapter 6) includes a description of the project alternatives. An EIR is required by CEQA to provide adequate information for decision makers to make a reasonable choice between alternatives based on the environmental aspects of the proposed project and alternatives. As demonstrated in Table 6-1, this chapter provides a comparison of the impacts of the alternatives compared to those of the proposed project. This chapter also identifies the environmentally superior alternative.

CEQA Considerations (Chapter 7) discusses issues required by CEQA: unavoidable adverse impacts, irreversible environmental changes, growth inducement, and a summary of cumulative impacts.

The **References** (Chapter 8) used throughout the DEIR are included in this chapter.

Report Preparation (Chapter 9) includes a list of preparers of the DEIR.

The **Appendices** contain a number of reference items providing support and documentation of the analyses performed for this report.

Scope of this EIR

The City of Manteca, as lead agency, identified in the Initial Study for this EIR potentially significant impacts that could result from implementation of the proposed project. Based on the Initial Study (see Appendix A), the City determined that this EIR address the following technical issues:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Noise
- Public Services
- Public Utilities
- Transportation and Circulation
- Greenhouse Gas Emissions and Global Climate Change

Land use and planning is not considered a technical issue, but is addressed in Chapter 4.

Issues identified as being less than significant in the Initial Study and, therefore, not discussed in this EIR include:

- Potential impacts on scenic vistas
- Potential impacts due to the creation of odors
- Potential substantial adverse risk due to geologic hazards including seismic hazards and unstable soils
- Potential exposure to hazards or hazardous materials
- Loss of availability of mineral resources
- Exposure of people to substantial aircraft noise
- Impacts associated with the displacement of substantial numbers of people

See the Initial Study in Appendix A for a complete discussion of technical issues focused out of this EIR.

2. PROJECT DESCRIPTION

2.0 PROJECT DESCRIPTION

INTRODUCTION

The proposed Austin Road Business Park and Residential Community (ARBPRC) project site encompasses approximately 1,049 acres in unincorporated San Joaquin County (see Figure 2-1). The proposed project would include heavy industrial, commercial, office, mixed use, various residential uses, and public/quasi-public uses. Figure 2-2 depicts the land use plan for the project. A detailed description of the proposed development of the project is provided below.

PROJECT LOCATION AND SETTING

Project Site

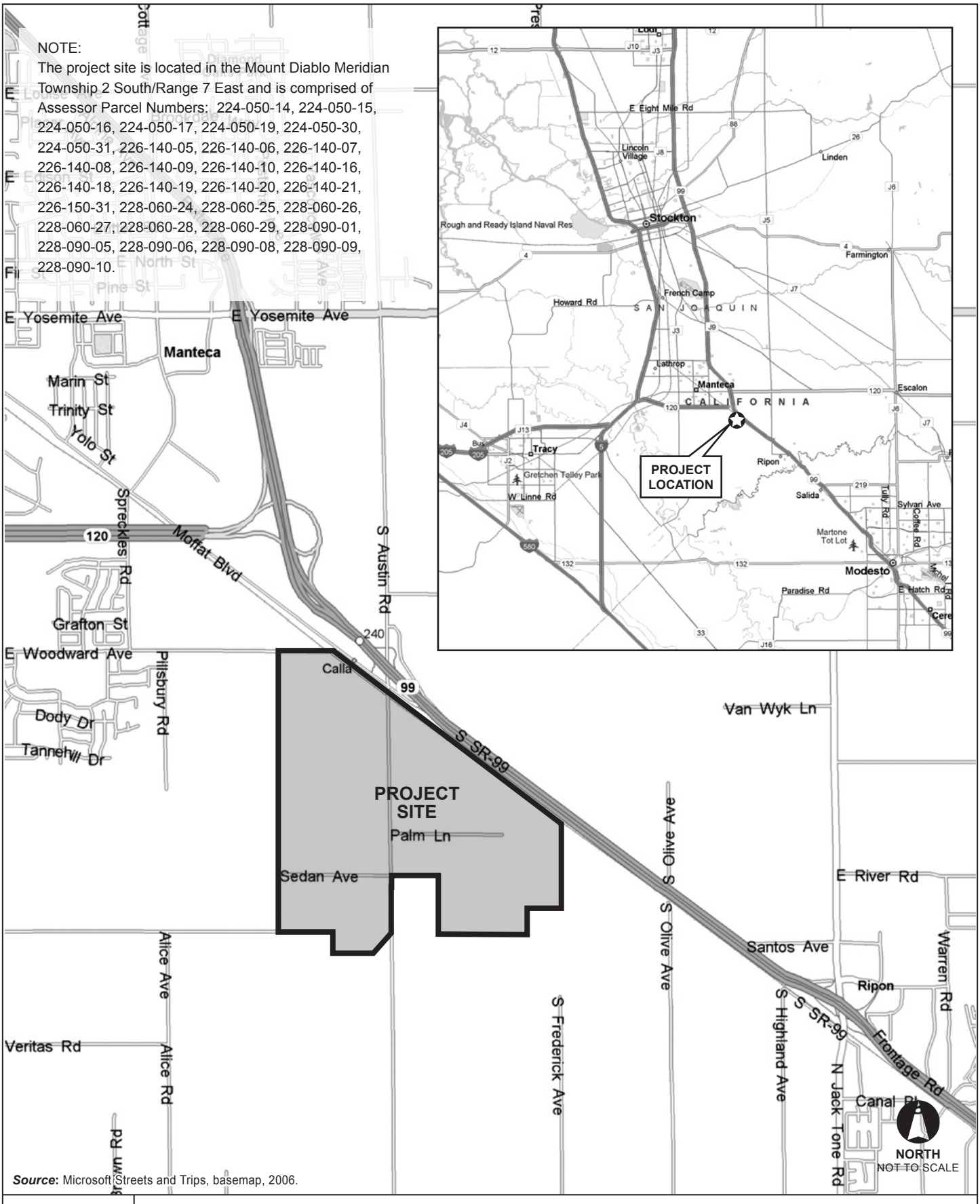
The project site is located in San Joaquin County adjacent to the southeast limits of the City of Manteca. The project site is within the ten-year planning horizon of the adopted City of Manteca Sphere of Influence. The area is generally bounded by East Woodward Avenue to the north, Highway 99 to the east, and is bisected by the existing Austin Road, which runs north-south (see Figure 2-1).

The majority of the project site is currently under agricultural use. Crop types include grapes, almonds, corn, oats, and strawberries. The existing circulation within the project site consists of rural roads, with the exception of Woodward Avenue and Austin Road. Existing infrastructure on the site is limited; the 14 rural residences on the project site have individual wells and septic systems. The project site also includes an approximately 30-acre parcel located adjacent to Highway 99 that includes modern office, warehouse, and industrial uses. Approximately 202 acres of the project site are located in the Manteca Unified School District and approximately 849 acres are located within the Ripon Unified School District.

Existing General Plan Designations and Zoning

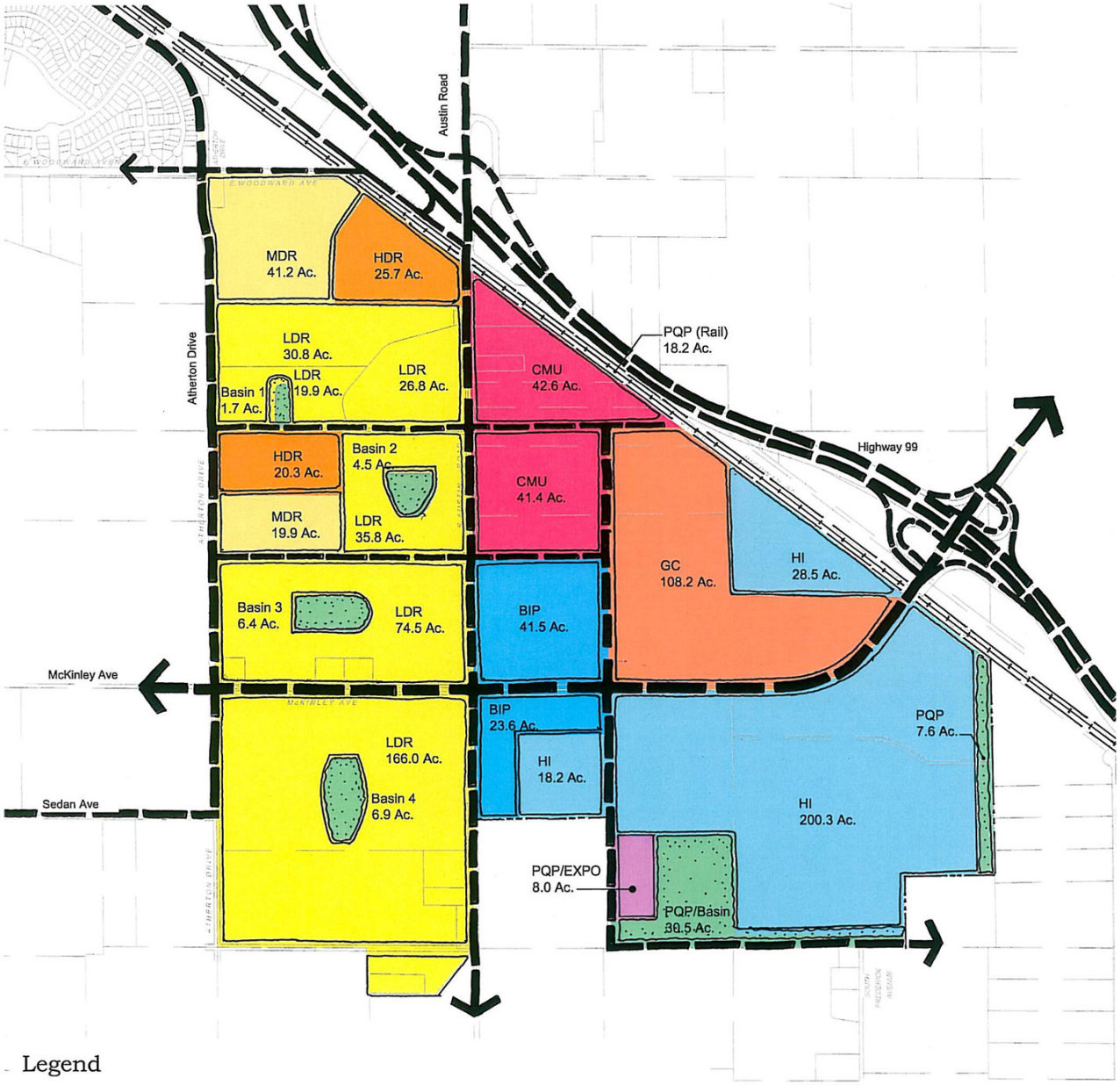
The project site is currently designated General Agriculture (A/G) in the San Joaquin County General Plan, with the exception of an approximately 30-acre parcel located adjacent to Highway 99 that is designated Limited Industrial (I/L). San Joaquin County zoning for most parcels on the project site is Agriculture 40-acre minimum parcel area (AG-40), with the exception of the aforementioned approximately 30-acre parcel, which is zoned Industrial (I-W).

The Manteca General Plan designates the project site as Low Density Residential (LDR), Medium Density Residential (MDR), High Density Residential (HDR), General Commercial (GC), Heavy Industrial (HI), and Park (P) (see Figure 2-3). Because the project site is not within Manteca city limits, the City of Manteca has not established zoning districts for the project site.



***Source*:** Microsoft Streets and Trips, basemap, 2006.

FIGURE **2-1**
Project Location



Legend

Land Use

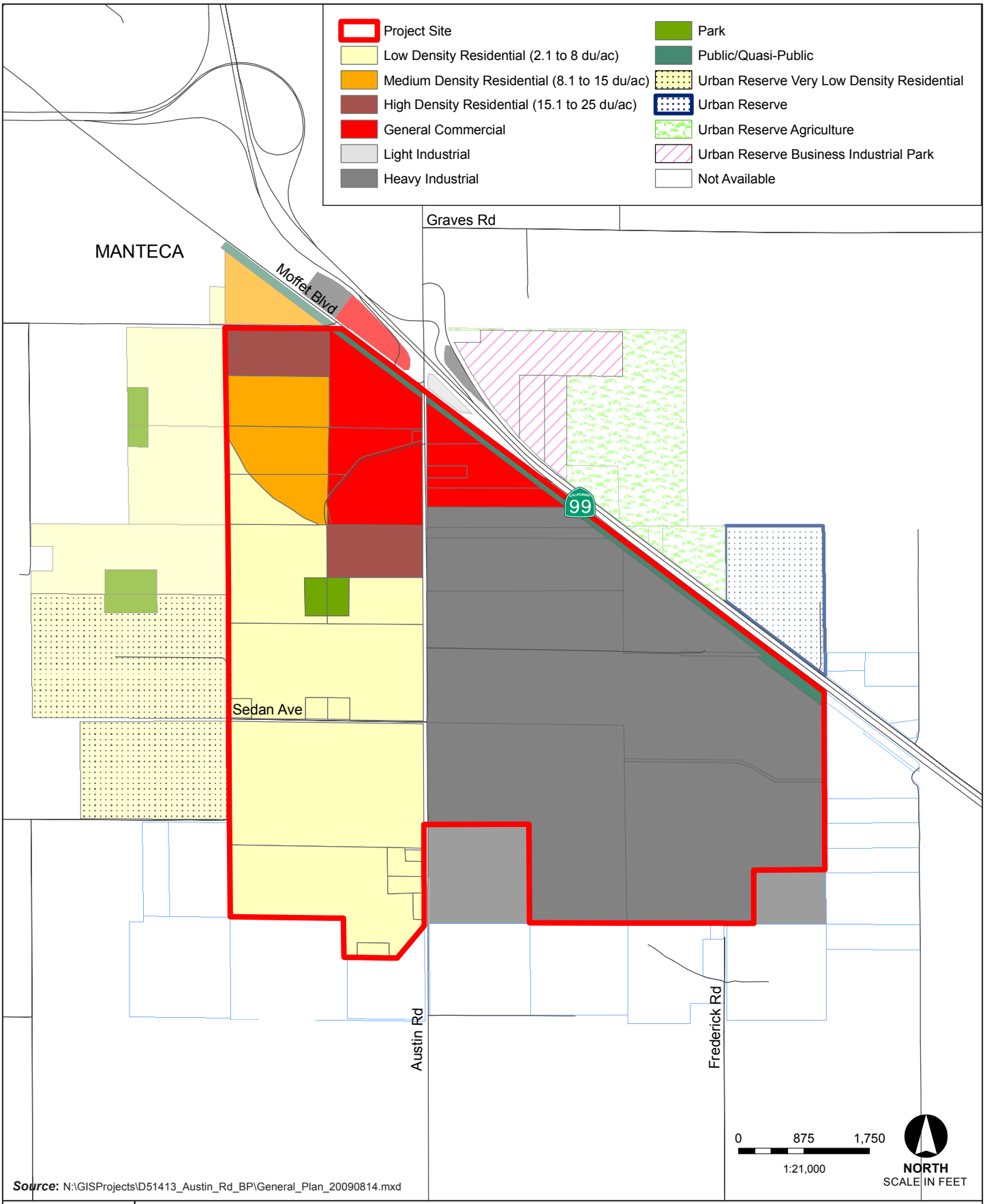
- GC — General Commercial
- CMU — Commercial Mixed Use - Office/Comm.
  Commercial Mixed Use - Residential
- BIP — Business / Industrial / Professional
- HI — Heavy Industrial
- LDR — Low Density Residential
- MDR — Medium Density Residential
- HDR — High Density Residential
- PQP — Public/Quasi-Public
- Railroad Right-of-Way (PQP)
  Future Pocket Parks (not shown)
  Dual Use Park/Basins

SCALE: 0 250 500 1000 1500

NORTH
SCALE IN FEET

***Source*:** Randall Planning & Design Inc., 2008.

FIGURE **2-2**
Proposed Land Use Plan



Source: N:\GISProjects\D51413_Austin_Rd_BP\General_Plan_20090814.mxd

FIGURE **2-3**

Existing Manteca General Plan Designations

Farmland Classification and Soil Types

The majority of the project site is classified as Important Farmland by the California Department of Conservation, with approximately 1,013 acres of Farmland of Statewide Importance, approximately 10 acres of Confined Animal Agriculture (which qualifies as Farmland of Local Importance in San Joaquin County), and approximately 8 acres of Prime Farmland. Approximately 20 acres of the project site are classified as Urban/Built-Up. Soils on the project site consist of Bisgani loamy course sand, Delhi fine sand, Delhi loamy sand, Honcut sandy loam, Timor loamy sand, and Tinnin loamy course sand. Farmland classifications and soil types are discussed in detail in section 5.2, *Agricultural Resources*.

Williamson Act Contracts

The project site includes approximately 183 acres under Williamson Act contract. All of the Williamson Act contracts are under Non-Renewal status. The project proposes that the areas currently under Williamson Act contract remain in agricultural use until the contracts expire, after which those areas could be developed with residential uses. Parcels under Williamson Act contract within the project site and immediately adjacent to the project site are shown on Figure 2-4.

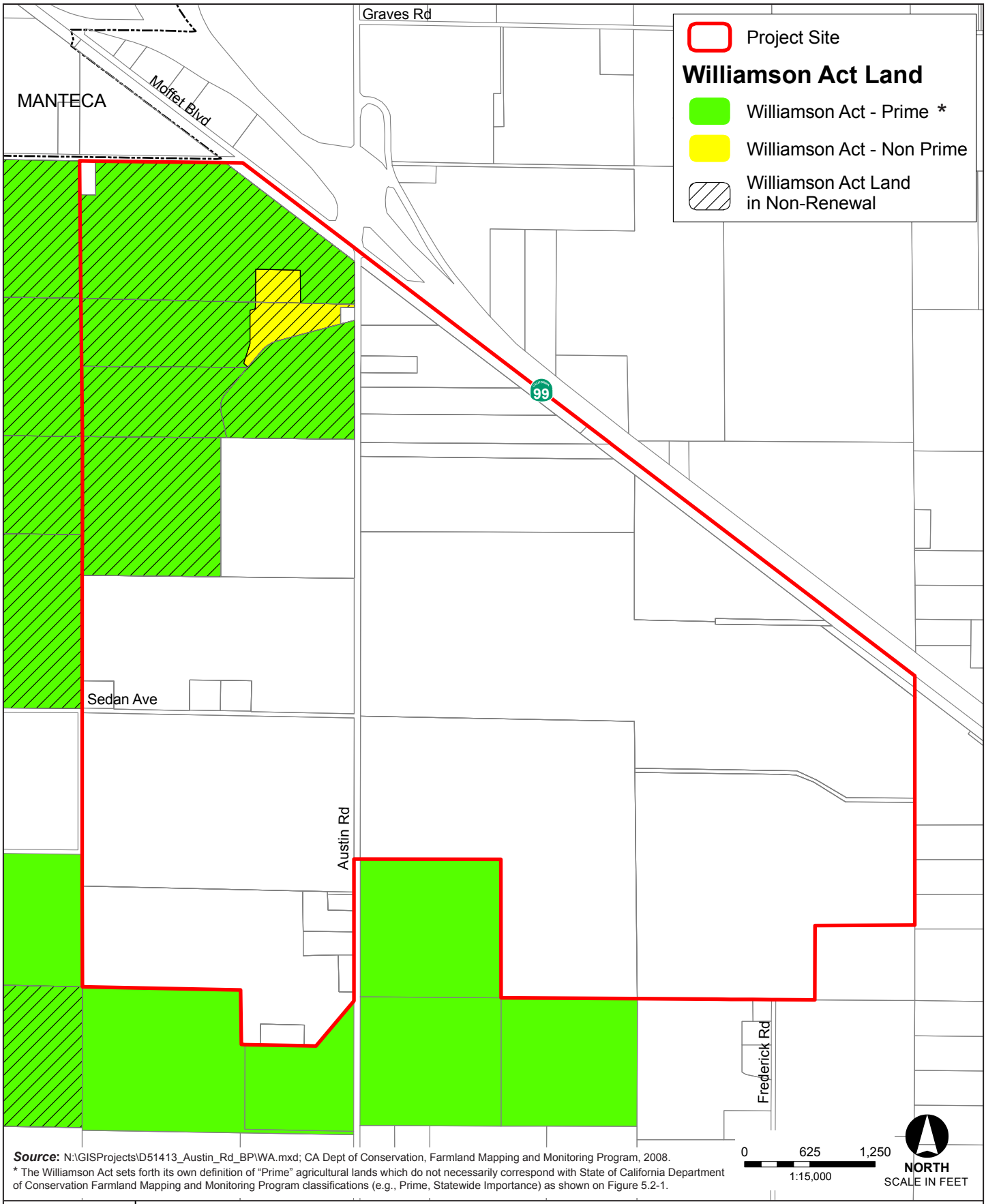
Planned and Approved Development in the ARBPRC Vicinity

Planned and approved development in the vicinity of the ARBPRC site includes the Diego Country Estates (25 residential units), Winters Country Estates (38 residential units), Tesoro Apartments (300 residential units), Pillsbury Estates (275 residential units), Evans Estates (586 residential units), and Bright World Estates (4 residential units). These developments are generally west and northwest of the ARBPRC site and south of Highway 120.

PROJECT OBJECTIVES

The project applicant has developed the following objectives for the proposed project.

1. Provide a diversity of employment and housing types and opportunities.
2. Provide a pedestrian oriented neighborhood compatible with the Austin Road Business Park and Planned Community site, with pedestrian features that include safe, comfortable sidewalks and relatively direct routes to schools, parks, and commercial services.
3. Provide access to neighborhood parks.
4. Create a distinctive neighborhood identity through street landscaping, gateways, and traffic circles.
5. Provide opportunities for retail, commercial, industrial, and professional uses that contribute to the economic base of the City of Manteca.
6. Provide a major employment center identified in the 2023 General Plan that could reduce the home-to-work commute by Manteca residents.



Source: N:\GISProjects\D51413_Austin_Rd_BP\WA.mxd; CA Dept of Conservation, Farmland Mapping and Monitoring Program, 2008.

* The Williamson Act sets forth its own definition of "Prime" agricultural lands which do not necessarily correspond with State of California Department of Conservation Farmland Mapping and Monitoring Program classifications (e.g., Prime, Statewide Importance) as shown on Figure 5.2-1.

FIGURE **2-4**

Williamson Act Lands

7. Establish high quality development that provides a gateway and a distinctive landmark to the City of Manteca along Highway 99.

PROJECT ELEMENTS

The proposed project includes a range of land uses and development intensities. The various land uses include heavy industrial, commercial, office, mixed use, residential, and public/quasi-public. The public/quasi public uses include detention basins/parks, open space, and an exposition (EXPO) center. The proposed EXPO center would include a 32,000-square-foot exposition hall for conferences; an amphitheater with 1,000 permanent seats and a 4,000-person-capacity lawn seating for outdoor events; and a 10,000-square-foot agricultural EXPO facility.

Proposed ARBPRC Master Plan

The City of Manteca prepared the ARBPRC Master Plan to guide the future development of the project site. The Master Plan is intended to define proposed ARBPRC land uses, promote compatibility between the land uses, and ensure that future development of the project site is accomplished in a comprehensive manner that is consistent with the framework of master planned roads, building areas, and open spaces. The primary components of the Master Plan are the Land Use Plan, the Design Guidelines, and the Phasing Plan.

The Land Use Plan establishes the land use categories and zoning districts for the ARBPRC. It sets the land use framework for subsequent development review and defines the boundary limits of the overall project. In addition to establishing the basic allocation of land uses, the Land Use Plan establishes the primary circulation system. The Land Use Plan is intended to allow flexibility for subsequent subdivision applications that will define the specific mix, configuration, and character of uses in greater deal.

The Design Guidelines apply to heavy industrial, business/professional, commercial, residential, and public uses within the ARBPRC. The guidelines are to be used by development applicants and their consultants in the formulation of specific development proposals. The Guidelines will also be used by City of Manteca staff in the review of development proposals according to the terms and conditions of Section 17.49.040 Site Plan Review/Design Review of the Manteca Municipal Code.

The phasing plan defines the sequence of ARBPRC development. There are five phases proposed. The first phase focuses on heavy industrial uses; the second phase focuses on business, professional, and commercial uses; the third phase focuses on residential uses; the fourth phase focuses on general commercial uses; and the fifth focuses on heavy industrial, commercial mixed use, and all of the medium- and high-density residential and the remainder of the low-density residential.

Project Land Use Designations and Zoning

Land Use Designations

The proposed project would include a General Plan Amendment to change the land use designations on the site. Currently, the site includes designations for 96.1 acres GC, 519.7 acres HI, 318.8 acres LDR, 48.6 acres MDR, 40.5 acres HDR, and 6.7 acres P. The proposed project would change the designations to 108.2 acres GC, 83.9 acres Commercial Mixed Use, 65.1 acres Business Park, 247 acres HI, 342.8 acres LDR, 61.1 acres MDR, 46 acres HDR, 46.1 Public Quasi-Public/Open Space, and 30.2 acres P. A breakdown of proposed land uses for the project site is shown in Table 2-1. As shown in Figure 2-2, the proposed project would include residential uses along the western portion of the site, west of Austin Road, with medium-density and high-density residential in the north, along Woodward Avenue and in the central portion of the site. Industrial, commercial mixed use, and commercial are located east of Austin Road, with the majority of the industrial land in the southern portion of the site. The configuration of the proposed land uses are shown on Figure 2-2.

TABLE 2-1

PROPOSED AUSTIN ROAD BUSINESS PARK AND RESIDENTIAL COMMUNITY LAND USES

Land Use	Acres	Square Footage	Units
Heavy Industrial			
High-Cube Warehouse		4,465,000	
Light Industrial		915,000	
Subtotal	**247**	**5,380,000**	
Business/Industrial/Professional			
Office Park		203,000	
Light Industrial		608,000	
Mini-Storage		203,000	
Subtotal	**65.1**	**1,014,000**	
General Commercial			
Shopping Center		1,178,000	
Subtotal	**108.2**	**1,178,000**	
Commercial Mixed Use			
Shopping Center		410,000	
Office Park		91,000	
Apartment			828
Subtotal	**83.9**	**501,000**	**828**
Residential			
Low/Medium Density Residential	403.9		2,358
High Density Residential	46		1,012
Subtotal	**449.9**		**3,370**
Public/Quasi-Public			
Detention /Park	30.5		
Open Space	7.6		
EXPO	8	122,000	
Railroad Right-of-Way	18.2		
Pocket Parks	10.8		
Dual-Use Park/Basins	19.4		
Subtotal	**94.5**	**122,000**	
Total	***1048.6***	***8,195,000***	***4,198***

Zoning

Proposed zoning districts for the project site consist of General Commercial District (C-G), Community Commercial District (C-C), Business Industrial Park District (BIP), Heavy Industrial District (M-2), Single-Family Residential/Planned Development District (R-1/PD), Limited Multiple-Family Residential District (R-3), Multiple-Family Residential District (R-4), Public Quasi-Public District (Basin), Public Quasi-Public District (Park - Basin), Public Quasi-Public District (EXPO), Public Quasi-Public District (Railroad), and Public Quasi-Public District (Open Space). The proposed configuration of zoning districts is shown on Figure 2-5.

Proposed Circulation System

The project includes the development of internal collector and arterial roadways to serve the future development of the site, and certain improvements to existing facilities to provide project access. Primary access to the site from within the City of Manteca would be provided by the existing Woodward Avenue, by Atherton Drive from the north and northwest, and from the west by the future McKinley Avenue. McKinley Avenue is a proposed arterial/expressway that would run through the southern portion of the City of Manteca, connecting Highway 120 to Highway 99, including a portion through the proposed project site. Access to the project from the east side of Highway 99 and from the unincorporated areas to the north and south is provided by existing Austin Road (see Figure 2-2).

Access from Highway 99 would initially be provided by the existing Austin Road interchange, along with any required improvements to accommodate a portion of the initial phase of development. Ultimately, access from Highway 99 would be provided by a future new Austin Road/McKinley Avenue interchange, which would replace the existing Austin Road interchange and provide a second crossing of Highway 99 in the project area. A Project Study Report for the proposed replacement interchange is currently under preparation by the City and Caltrans.

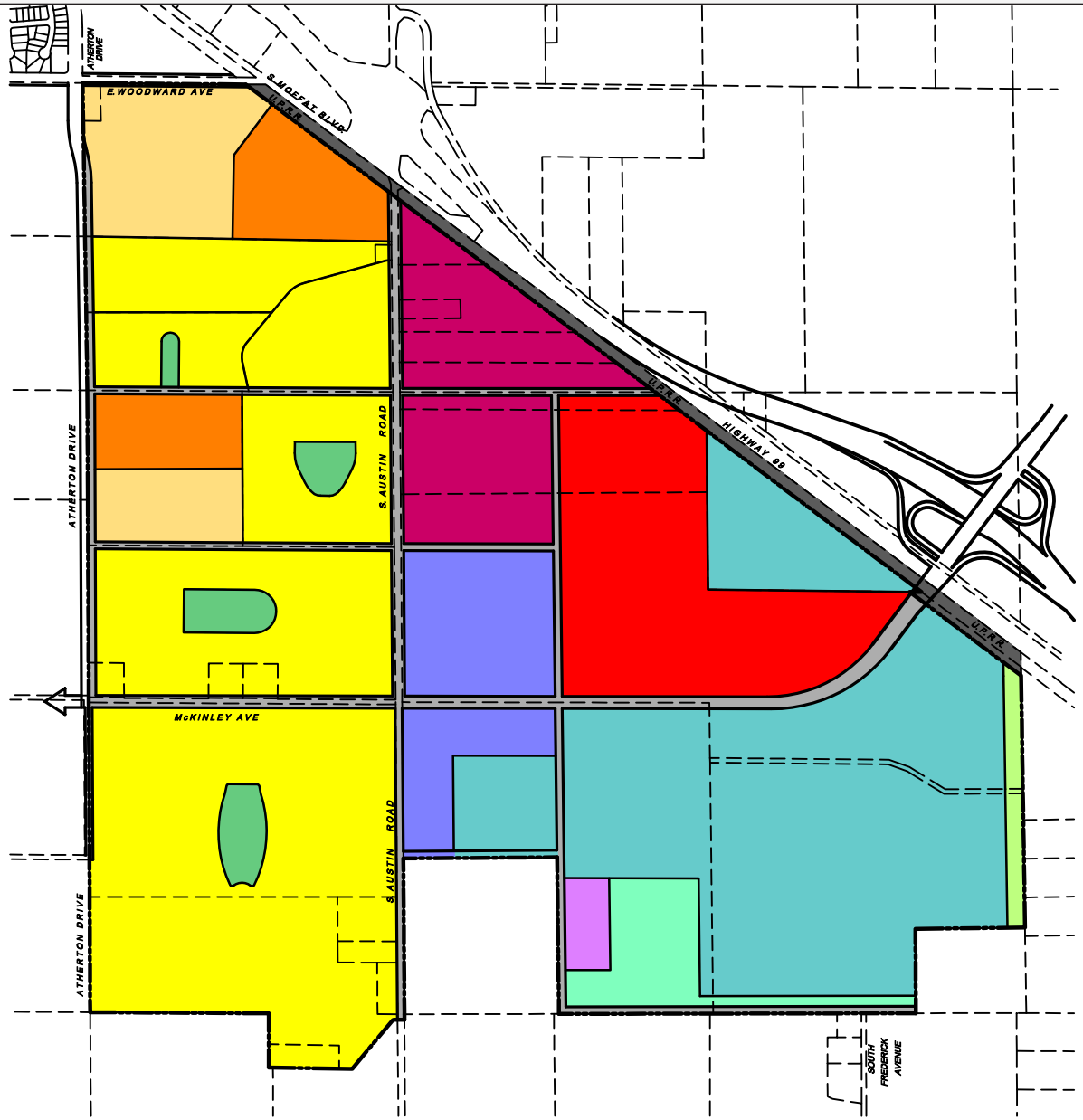
Parks and Open Space

The proposed project includes over 60 acres of parks, including 30.5-acres of detention basin/park facilities, 19.4 acres of dual use parks/basins, and 10.8 acres of pocket parks.

INFRASTRUCTURE IMPROVEMENTS

Stormwater

City of Manteca storm drain facilities currently exist in Woodward Avenue at the north end of the project site. Capacity in the facilities is currently limited due to incomplete downstream improvements. South San Joaquin Irrigation District (SSJID) facilities exist throughout the project site. The facilities are primarily “laterals” utilized to deliver irrigation water to specific properties. However, some facilities serve a dual purpose and are also utilized to convey stormwater runoff from development projects to the San Joaquin River. The storm drain collection system proposed for the project would be compatible with existing and future expected development patterns. The project site



***Source*:** MacKay & Somps, March 2009.

FIGURE **2-5**

Proposed Zoning

is divided for drainage purposes into four watersheds. Three watersheds, Sheds A, B and C, would drain to a pump station that would lift or pump water into an existing SSJID pipeline (Lateral 'W') along the southern boundary of the site. These sheds are not expected to require any improvements downstream of the connection point to Lateral 'W'. One watershed, Shed D, would drain to an existing city gravity pipe in Woodward Avenue along the northern boundary of the site. Development of Shed D is contingent upon the completion of future downstream city improvements.

The project would include the construction of storm drain facilities to serve the project site. The drainage system would consist of gravity lines, detention basins, pump stations, and a gravity outfall line that would lead from the basins to an existing downstream gravity system. The proposed detention basins would be sized to hold an entire 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. This type of design would minimize the use of the basins during low flow events, which will allow for maximum use of the basins as parks. The proposed drainage system is shown on Figure 2-6.

Wastewater

Wastewater collection and treatment would be provided by the City of Manteca. City of Manteca wastewater facilities currently exist in Woodward Avenue at the north end of the project site. Capacity in the facilities is currently limited due to incomplete downstream improvements. Development projects that have been constructed over the last several years downstream of the project site have installed interim improvements in order to convey wastewater to the City of Manteca Wastewater Quality Control Facility (WQCF). The interim improvements consist of a series of pump stations and forcemains.

The project site has been divided for wastewater purposes into two sheds. One shed, the Austin Road Pump Shed, would drain to an interim pump station. The other shed, the Woodward Avenue Gravity Shed, would drain to an existing city gravity pipe in Woodward Avenue along the northern boundary of the project site.

Initial phases of development within the Austin Road Shed would utilize an interim pump station and forcemain that would connect to existing downstream improvements in Woodward Avenue. The interim system would be designed to function with the ultimate City of Manteca Public Facilities Implementation Plan (PFIP) system. Later phases of development would require additional improvements to convey wastewater from Woodward Avenue to the WQCF. The extent of those future improvements will depend in large part on the PFIP. One option to increase the interim capacity in Woodward Avenue is to upgrade the Woodward Park pump station and forcemain system. Alternatively, the Austin Road forcemain could be extended directly to the Tara Park pump station at the intersection of Woodward Avenue and Galleria Drive. At some point, there will be a capacity limitation from the Tara Park pump station to the WQCF. Interim improvements for that

portion of the system could also include an upgrade to the pump and forcemain. Development of the Woodward Avenue Shed is contingent upon the completion of future downstream city improvements. The proposed wastewater collection system is shown on Figure 2-7. Proposed off-site extension of wastewater infrastructure is shown on Figure 2-8.

Water

Domestic water service for the project would be provided by the City of Manteca. Properties within the project site area are not currently connected to a potable public water distribution system. Properties that require potable water utilize individual private wells and some properties receive irrigation water from the SSJID. The proposed water system would operate under a single- pressure zone consistent with the citywide master plan and a 12-inch diameter pipe network that is consistent with the citywide master plan would be constructed for the project. Initial phases of development would rely on two connection points to the existing city system. The most likely connections to be made with Phase 1 would be in Moffat Boulevard and Pillsbury Road. An additional connection point at Woodward Avenue would be added with future phases of development. A connection point in Main Street is also possible in the event adequate pressure cannot be maintained. The proposed potable water system is shown on Figure 2-9.

Solid Waste Disposal

Solid waste collection service for the project site would be provided by the City of Manteca. The City's solid waste is collected and delivered to the Forward Landfill located at 9999 S. Austin Road in unincorporated San Joaquin County.[1]

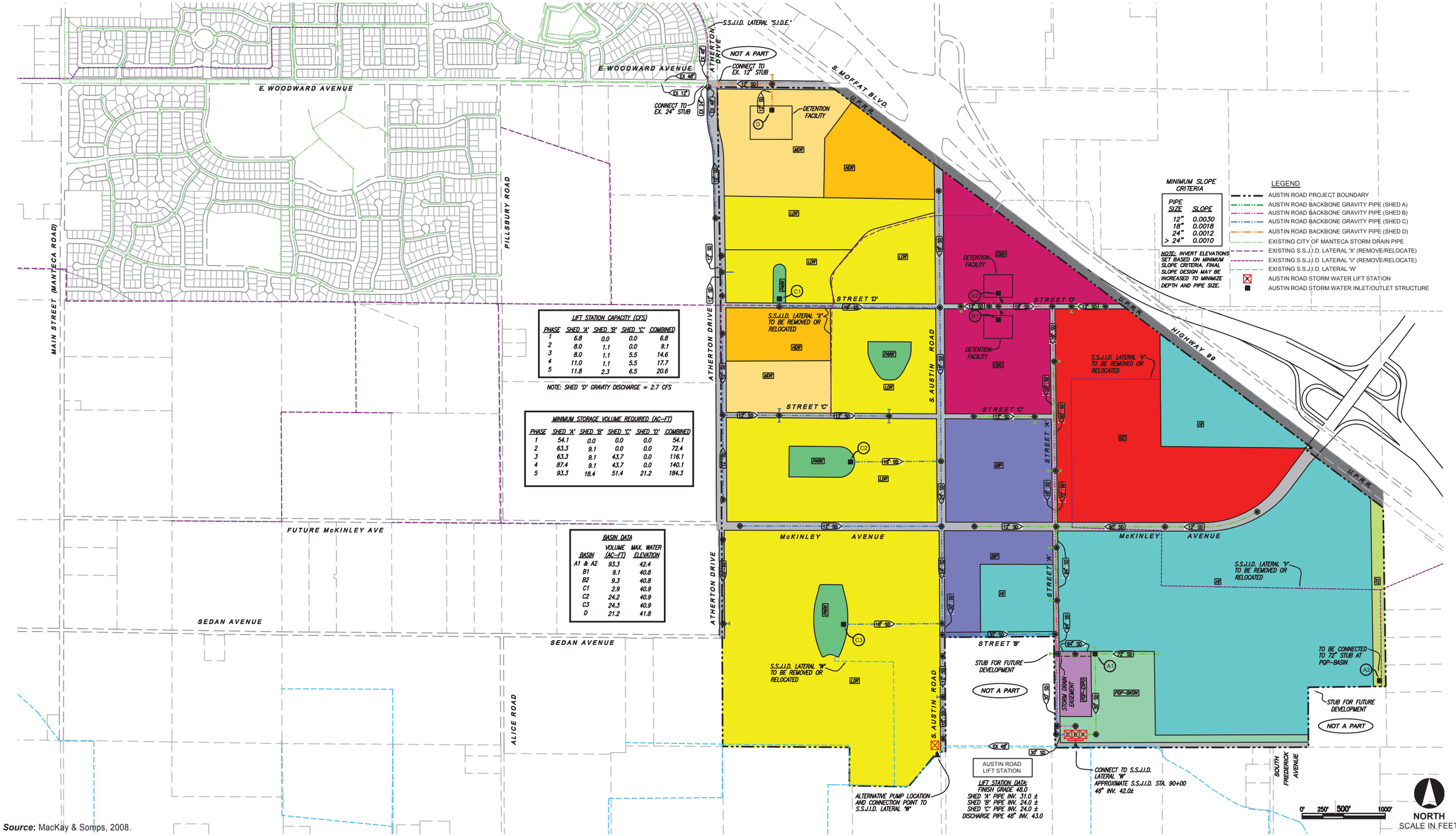
Electricity and Gas

Pacific Gas and Electric Company (PG&E) would provide electric and natural gas service to the project. The on-site service lines would be sized to meet the demand of the project, and public utility easements would be dedicated for all underground facilities. Extension of lines and construction of facilities would occur concurrently with development phases, and the location of this infrastructure would be identified in the final project design. All new on-site infrastructure would be installed underground in conformance with City standards.

PROJECT PHASING

It is anticipated that the project would be developed in several phases. The first phase is anticipated to begin in 2010 and would include approximately 218 acres of heavy industrial, 46 acres of public/quasi public uses, including the 8-acre EXPO center and 24 acres of business/industrial/professional. Phase one is located in the southeastern portion of the site, south of the McKinley Avenue extension. Phase two is anticipated to begin in 2012 and totals approximately 82 acres, including the remaining 41 acres of BIP, and approximately half of the commercial mixed use. Phase three is anticipated to begin in 2013 and would total approximately

1 City of Manteca. 2009. Phone communication with Lisa H., Solid Waste Division, November 4, 2009.



LIFT STATION CAPACITY (CFS)

PHASE	SHED 'A'	SHED 'B'	SHED 'C'	COMBINED
1	6.8	0.0	0.0	6.8
2	8.0	1.1	0.0	9.1
3	8.0	1.1	5.5	14.6
4	11.0	1.1	5.5	17.7
5	11.8	2.3	6.5	20.6

NOTE: SHED 'D' GRAVITY DISCHARGE = 2.7 CFS

MINIMUM STORAGE VOLUME REQUIRED (AC-FT)

PHASE	SHED 'A'	SHED 'B'	SHED 'C'	SHED 'D'	COMBINED
1	54.1	0.0	0.0	0.0	54.1
2	63.3	9.1	0.0	0.0	72.4
3	63.3	9.1	43.7	0.0	116.1
4	87.4	9.1	43.7	0.0	140.1
5	93.3	18.4	51.4	21.2	184.3

BASIN DATA

BASIN	VOLUME (AC-FT)	MAX. WATER ELEVATION
A1 & A2	93.3	42.4
B1	9.1	40.8
B2	9.3	40.8
C1	2.9	40.9
C2	24.2	40.9
C3	24.3	40.9
D	21.2	41.8

MINIMUM SLOPE CRITERIA

PIPE SIZE	SLOPE
12"	0.0030
18"	0.0018
24"	0.0012
> 24"	0.0010

NOTE: INVERT ELEVATIONS SET BASED ON MINIMUM SLOPE CRITERIA. FINAL SLOPE DESIGN MAY BE INCREASED TO MINIMIZE DEPTH AND PIPE SIZE.

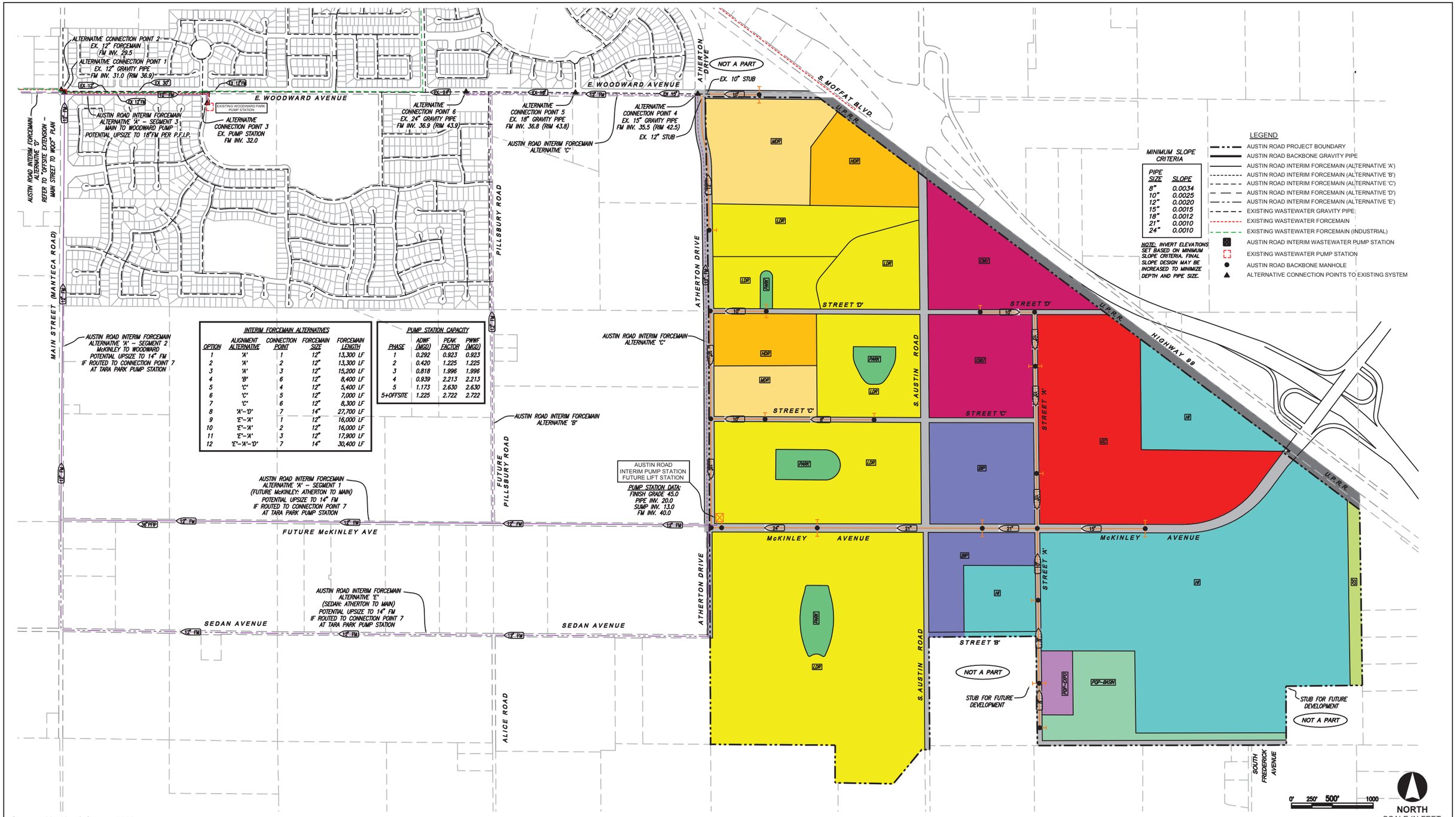
LEGEND

- AUSTIN ROAD PROJECT BOUNDARY
- AUSTIN ROAD BACKBONE GRAVITY PIPE (SHED A)
- AUSTIN ROAD BACKBONE GRAVITY PIPE (SHED B)
- AUSTIN ROAD BACKBONE GRAVITY PIPE (SHED C)
- AUSTIN ROAD BACKBONE GRAVITY PIPE (SHED D)
- EXISTING CITY OF MANTECA STORM DRAIN PIPE
- EXISTING S.S.J.I.D. LATERAL 'A' (REMOVE/RELOCATE)
- EXISTING S.S.J.I.D. LATERAL 'V' (REMOVE/RELOCATE)
- EXISTING S.S.J.I.D. LATERAL 'W'
- AUSTIN ROAD STORM WATER LIFT STATION
- AUSTIN ROAD STORM WATER INLET/OUTLET STRUCTURE

Source: MacKay & Somps, 2008.

FIGURE **2-6**

Proposed Drainage Improvements



INTERIM FORCEMAIN ALTERNATIVES

OPTION	ALIGNMENT ALTERNATIVE	CONNECTION POINT	FORCEMAIN SIZE	FORCEMAIN LENGTH
1	'A'	1	12"	13,300 LF
2	'A'	2	12"	13,300 LF
3	'A'	3	12"	15,200 LF
4	'B'	6	12"	8,400 LF
5	'C'	4	12"	5,400 LF
6	'C'	5	12"	7,000 LF
7	'C'	6	12"	8,300 LF
8	'A'–'D'	7	14"	27,700 LF
9	'E'–'A'	1	12"	16,000 LF
10	'E'–'A'	2	12"	16,000 LF
11	'E'–'A'	3	12"	17,900 LF
12	'E'–'A'–'D'	7	14"	30,400 LF

PUMP STATION CAPACITY

PHASE	ADWF (MGD)	PEAK FACTOR	PWWF (MGD)
1	0.292	0.923	0.923
2	0.420	1.225	1.225
3	0.818	1.996	1.996
4	0.939	2.213	2.213
5	1.173	2.630	2.630
5+OFFSITE	1.225	2.722	2.722

MINIMUM SLOPE CRITERIA

PIPE SIZE	SLOPE
8"	0.0034
10"	0.0025
12"	0.0020
15"	0.0015
18"	0.0012
21"	0.0010
24"	0.0010

NOTE: INVERT ELEVATIONS SET BASED ON MINIMUM SLOPE CRITERIA. FINAL SLOPE DESIGN MAY BE INCREASED TO MINIMIZE DEPTH AND PIPE SIZE.

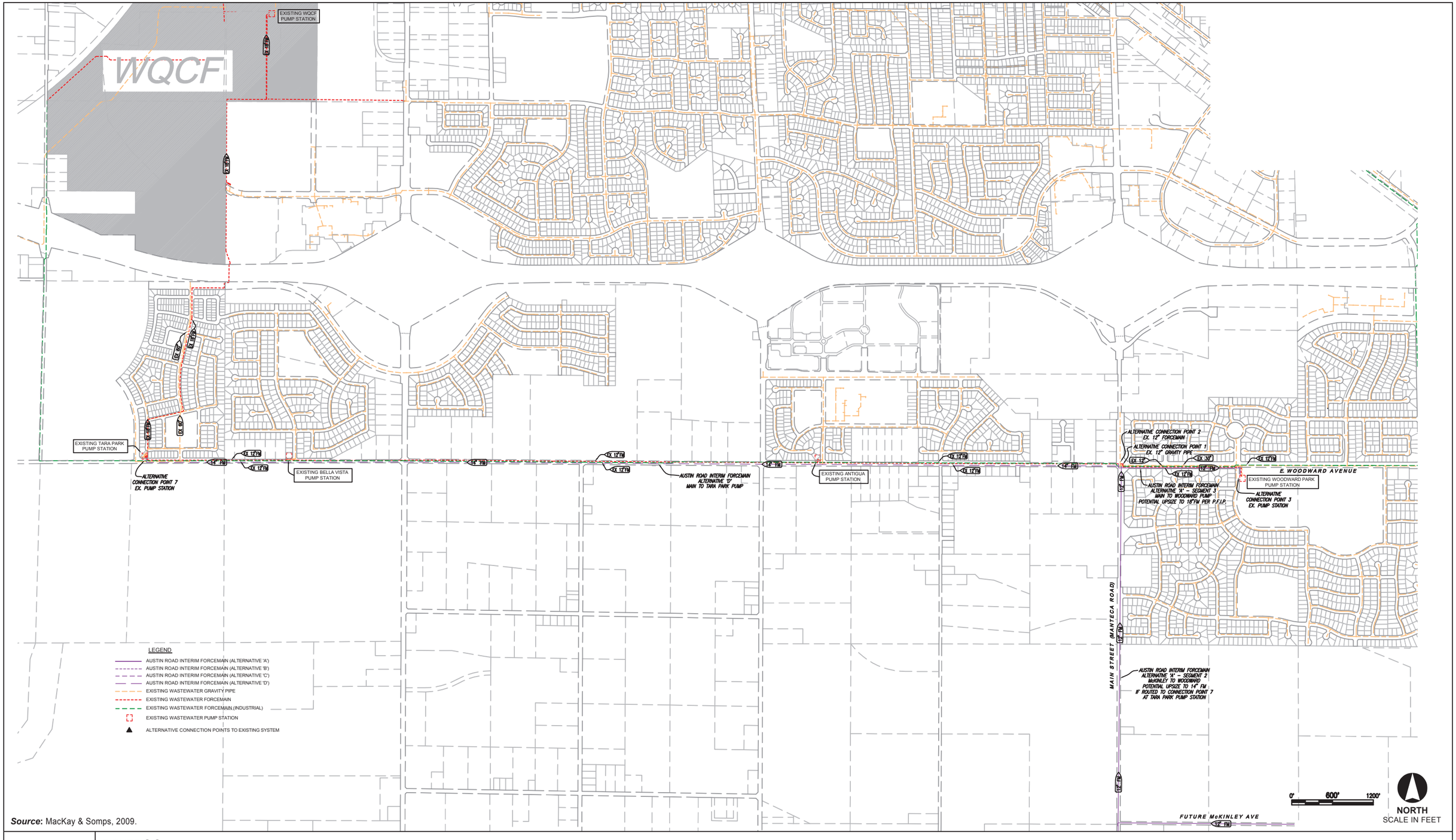
LEGEND

- AUSTIN ROAD PROJECT BOUNDARY
- AUSTIN ROAD BACKBONE GRAVITY PIPE
- AUSTIN ROAD INTERIM FORCEMAIN (ALTERNATIVE 'A')
- AUSTIN ROAD INTERIM FORCEMAIN (ALTERNATIVE 'B')
- AUSTIN ROAD INTERIM FORCEMAIN (ALTERNATIVE 'C')
- AUSTIN ROAD INTERIM FORCEMAIN (ALTERNATIVE 'D')
- AUSTIN ROAD INTERIM FORCEMAIN (ALTERNATIVE 'E')
- EXISTING WASTEWATER GRAVITY PIPE
- EXISTING WASTEWATER FORCEMAIN
- EXISTING WASTEWATER FORCEMAIN (INDUSTRIAL)
- AUSTIN ROAD INTERIM WASTEWATER PUMP STATION
- EXISTING WASTEWATER PUMP STATION
- AUSTIN ROAD BACKBONE MANHOLE
- ALTERNATIVE CONNECTION POINTS TO EXISTING SYSTEM

Source: MacKay & Somps, 2008.

FIGURE **2-7**

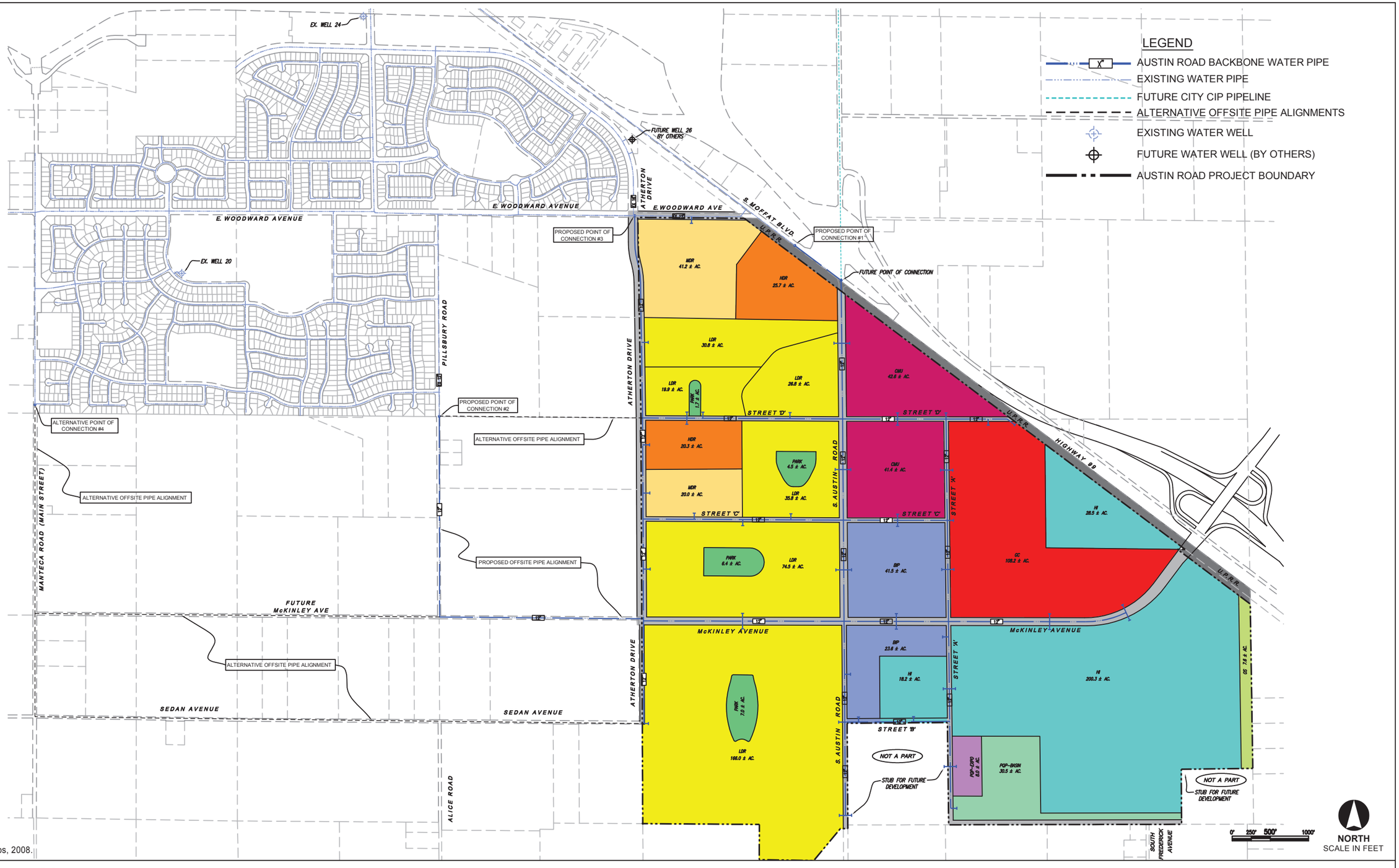
Proposed Wastewater Collection System



Source: MacKay & Somps, 2009.

FIGURE **2-8**

Proposed Wastewater Off-Site Extensions



Source: MacKay & Somps, 2008.

FIGURE **2-9**

Proposed Water Supply System

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Austin Road Business Park and Residential Community

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315 acres consisting of low-density residential as well as park and open space. The fourth phase is anticipated to begin in 2013 and would encompass the general commercial portion of the site, totaling approximately 108 acres. The fifth and final phase is anticipated to begin in 2020 and includes various densities of residential as well as commercial and industrial uses. Since the properties in the fifth phase are either under Williamson Act contract or have existing uses, there are no immediate plans for development of these parcels, and would encompass the final phase of the project. A phasing map is shown on Figure 2-10.

PROJECT CONSTRUCTION

Site preparation would include demolition of existing structures on the project site, clearing and grubbing, and removal of existing irrigation facilities. Grading activities at the site would result in a balanced cut and fill (i.e., no substantial export of soil material) of approximately two million cubic yards of earthwork for buildout of the project (approximately 200,000 to 500,000 cubic yards per phase). As indicated above, project construction would occur over five phases, and equipment would include, but not be limited to**,** scrapers, bulldozers, excavators, compactors, water trucks; loaders, and dump trucks. Construction activities would occur between the hours of 7 a.m. and 7 p.m.

REQUIRED PERMITS AND APPROVALS

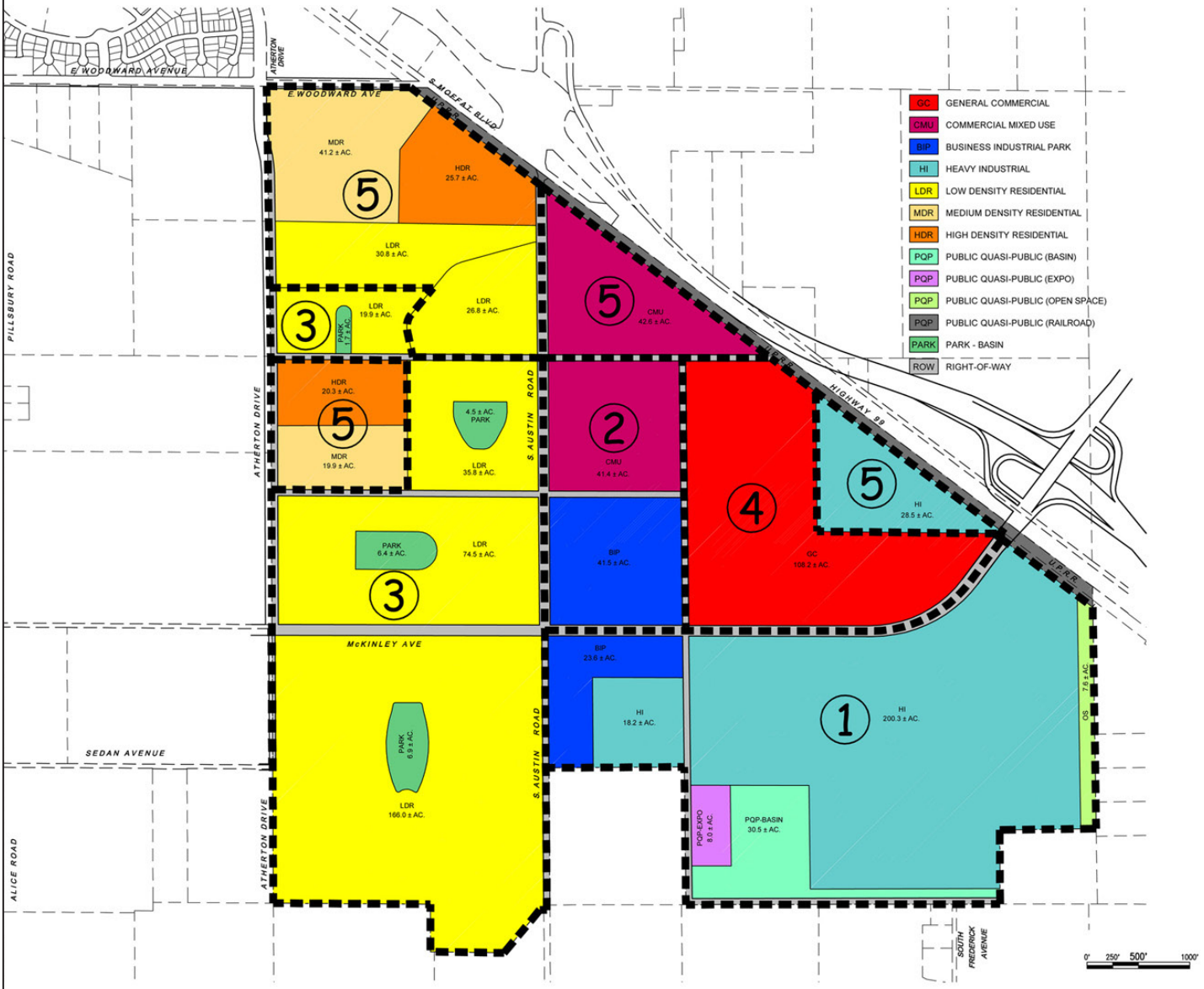
The City of Manteca would be required to certify that this EIR adequately identifies the significant environmental effects of the proposed project, pursuant to CEQA and the State CEQA Guidelines. The project applicants are seeking approval of the following discretionary actions:

- Certification of the EIR and Mitigation Monitoring Plan
- General Plan Amendments (as illustrated on Figure 2-2)
- Prezone
- Annexation
- Master Plan

The project would also require approval by the San Joaquin County Local Agency Formation Commission for annexation of the project site to the City of Manteca. Other agencies that may issue approvals or permits for the project include but are not limited to the San Joaquin Valley Air Pollution Control District, the SSJID, and the Central Valley Regional Water Quality Control Board, and the California Department of Fish and Game.

SUBSEQUENT PROJECT REVIEW

The EIR assumes development within each of the proposed land use classifications would be consistent with the uses identified in Table 2-1. The City would review subsequent project applications to determine consistency with the Manteca General Plan, the Municipal Code, and the ARBPRC Master Plan.



***Source*:** MacKay & Somps, 2009.

NORTH
SCALE IN FEET

FIGURE **2-10**
Phasing Map

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Austin Road Business Park and Residential Community

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3. SUMMARY OF IMPACTS AND MITIGATION MEASURES

3.0 SUMMARY OF IMPACTS AND MITIGATION MEASURES

PROJECT UNDER REVIEW

The Austin Road Business Park and Residential Community (ARBPRC) is an approximately 1,049-acre mixed-use development that would include heavy industrial, commercial, office, mixed use, various residential uses and public/quasi-public uses. The proposed project includes up to 4,198 residential units and up to approximately 8.3 million square feet of non-residential uses.

The project site is located in San Joaquin County adjacent to the southeast limits of the City of Manteca. The project site is within the ten-year planning horizon of the adopted City of Manteca Sphere of Influence. The area is generally bounded by East Woodward Avenue to the north, Highway 99 to the east, and is bisected by the existing Austin Road, which runs north-south.

SUMMARY OF IMPACTS

Effects Found to be Less Than Significant

Issues focused out of this EIR that were identified as being less than significant in the Initial Study include:

- Potential impacts on scenic vistas
- Potential impacts due to the creation of odors
- Potential substantial adverse risk due to geologic hazards including seismic hazards and unstable soils
- Potential exposure to hazards or hazardous materials
- Loss of availability of mineral resources
- Exposure of people to substantial aircraft noise
- Impacts associated with the displacement of substantial numbers of people

For a complete discussion of technical issues focused out of this EIR, please see the Initial Study in Appendix A.

As shown in Table 3-1, a number of project impacts identified in the EIR were found to be less than significant, requiring no mitigation. In the course of drafting the EIR for this project, it was determined that numerous other identified impacts could be reduced to a less-than-significant level with implementation of the proposed mitigation measures described herein.

Environmental Impacts and Mitigation

Under CEQA, a significant effect on the environment is defined as a substantial or potentially substantial adverse change in any of the physical conditions within the area affected by the project, including air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (CEQA Guidelines Section 15382). Implementation of the proposed project would result in significant impacts to some of these resources, which are analyzed in Sections 5.1 through 5.10 of this document and summarized in Table 3-1 (provided at the end of this Chapter).

This EIR discusses mitigation measures that could be implemented by the City and/or the project applicant to reduce potential adverse impacts to a level that is considered less than significant. Such mitigation measures are summarized in Table 3-1 and are found in the corresponding sections of this document. However, even with the application of feasible mitigation measures, some impacts could not be reduced to less-than-significant levels. The following are the significant and unavoidable impacts that were identified for both project-level and cumulative impacts:

Project-Specific Significant and Unavoidable Impacts

5.1-3 The proposed project could substantially degrade the existing visual character or quality of the site and its surroundings.

5.2-1 The proposed project could convert Important Farmland (Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance) as defined in the California Department of Conservation Farmland Mapping and Monitoring Program to non-agricultural use.

5.2-2 The proposed project could conflict with existing zoning for agricultural use or with a Williamson Act contract.

5.3-1 Construction activities could generate substantial concentrations of criteria air pollutants, including fugitive dust.

5.3-2 Operation of the proposed project would generate emissions that may exceed SJVAPCD thresholds for ROG, NO_x and PM_{10}.

5.3-3 Uses developed within the proposed project could expose sensitive receptors to project-generated toxic air emissions.

5.6-2 Operation of land uses associated with the proposed project could result in a substantial increase in local traffic noise levels over existing and future noise levels without the project.

5.6-4 Construction of the proposed project could result in the exposure of sensitive receptors to excessive vibration levels.

5.6-6 Implementation of the proposed project could result in the exposure of sensitive land uses to excessive noise levels associated with the continued operation of the UPRR rail line.

5.9-1 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the four intersections around the Austin Road/SR 99 interchange.

5.9-2 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels at the Main Street/Eastbound SR 120 Ramps signalized intersection.

5.9-3 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Main Street/Atherton Drive intersection.

5.9-7 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Austin Road/Ripon Road intersection.

5.9-8 The proposed project would cause an increase in traffic which would degrade or exacerbate unacceptable LOS on 13 freeway mainline segments near the project.

5.9-9 The proposed project would cause an increase in traffic which would degrade or exacerbate unacceptable operations at freeway merge, diverge, and weaving areas near the project.

5.9-13 The proposed project would generate new travel across at-grade railroad crossings.

Cumulative Significant and Unavoidable Impacts

Aesthetics

Because the project proposes land uses that could develop large scale structures, the project would contribute to a substantial change in visual character from agricultural to developed. The proposed project would contribute to the cumulative increase in ambient light that would exist in combination with other development, and add new light sources and glare that could create hazards.

Agricultural Resources

The project would contribute to the trend of land conversion from agricultural uses to urban and other non-agricultural uses (including wildlife habitat enhancement) in the Central Valley.

Air Quality

The proposed project would make a cumulatively considerable contribution during construction with regard to SJVAPCD-identified criteria pollutants. The proposed project's contribution to ROG and NOx criteria pollutant emissions would be cumulatively considerable. Project-generated toxic air emissions would contribute to potential health risks.

Cultural Resources

The proposed project has the potential to adversely affect significant archaeological resources and human remains that are unique and non-renewable members of finite classes.

Noise

The contribution of the proposed project to future roadway noise levels would exceed the identified thresholds of significance.

Vibration from future development could potentially combine with construction vibration of the proposed project to exceed thresholds for vibration.

Transportation and Circulation

The proposed project would cause an increase in traffic which would degrade the signalized intersection operations to unacceptable levels at the Main Street/SR 120 Ramp terminal intersections.

The proposed project would exacerbate unacceptable operations at the Main Street/Atherton Drive intersection.

The proposed project exacerbates unacceptable operations at the Main Street/Woodward Avenue intersection.

The proposed project would exacerbate unacceptable operations at the four intersections around the Austin Road/SR 99 interchange.

The proposed project would exacerbate unacceptable operations at the Austin Road/Ripon Road intersection.

The proposed project would exacerbate unacceptable freeway mainline operations on all 16 freeway mainline segments near the project.

The proposed project would cause an increase in traffic which would exacerbate unacceptable operations at freeway merge, diverge, and weaving areas near the project.

Global Climate Change

The construction of residential, industrial, office, and commercial uses under the proposed project would result in additional greenhouse gas emissions, which could represent a substantial contribution to greenhouse gas emissions in California.

ALTERNATIVES TO THE PROPOSED PROJECT

The EIR analyzes the following alternatives to the proposed project:

No Project/No Development Alternative: This alternative assumes that the proposed project would not occur and there would be no development of the site. This alternative assumes any existing agricultural operations that have historically occurred on the site would remain.

No Project/Existing General Plan Alternative: This alternative assumes that the proposed project would not be developed, but the site would be developed as currently designated in the City of Manteca General Plan. The Manteca General Plan designates the project site as Low Density Residential (LDR; 318.8 acres), Medium Density Residential (MDR; 48.6 acres), High Density Residential (HDR; 40.5 acres), General Commercial (GC; 96.1 acres), Heavy Industrial (HI; 519.7 acres), and Park (P; 6.7 acres).

Reduced Footprint/10 Percent Development Alternative: This alternative assumes development of the equivalent of approximately 10 percent of the proposed project would be developed on 10 percent of the project or approximately 105 acres.

The relative effects of the alternatives are identified in Chapter 6, Alternatives. Table 6-1 from Chapter 6, which provides a comparison of the alternatives, is also included in this chapter, following Table 3-1.

Potential Areas of Concern

The areas of potential concern identified through the environmental evaluation process include access and traffic operations, traffic impacts related to at-grade rail crossings, air emissions and air quality impacts, traffic impacts in Ripon and effects on traffic if large portions are developed prior to a new interchange, and impacts on schools. Comments on the NOP/IS are included as Appendix B.

SUMMARY TABLE

Table 3-1 (Summary of Impacts and Mitigation Measures), has been organized to correspond with the environmental issues discussed in Chapter 5. The summary table is arranged in four columns:

1. Environmental impacts (“Impact”)
2. Level of significance without mitigation (“Significance”)
3. Mitigation measures (“Mitigation Measure”)

4. The level of significance after implementation of mitigation measures ("Residual Significance")

If an impact is determined to be significant or potentially significant, mitigation measures are identified, where appropriate and feasible. More than one mitigation measure may be required to reduce the impact to a less-than-significant level. This EIR assumes that all applicable plans, policies, and regulations would be implemented, including, but not necessarily limited to, City General Plan policies, laws, and requirements or recommendations of the City of Manteca. Applicable plans, policies, and regulations are identified and described in the Regulatory Setting of each issue area and within the relevant impact analysis. A description of the organization of the environmental analysis, as well as key foundational assumptions regarding the approach to the analysis, is provided in Chapter 6.0 (Introduction to the Environmental Analysis).

TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.1 Aesthetics			
5.1-1 The proposed project could have a substantial adverse effect on a scenic vista.	NI	None required.	NI
5.1-2 The proposed project could substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	NI	None required.	NI
5.1-3 The proposed project could substantially degrade the existing visual character or quality of the site and its surroundings.	S	None available.	SU
5.1-4 The proposed project could create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.	LS	None required.	LS

Cumulative Impacts

Development of the project site in combination with other development in the project vicinity would not have a substantial adverse effect on a scenic vista because there are no areas that would qualify as a scenic vista in the vicinity of the project site. The cumulative impact would be considered less than significant.

Development of the proposed project, as well as other development in the cities of Manteca and Ripon, would not be visible from Highway 580, and there are no scenic highways in the vicinity of the project. The cumulative impact is considered less than significant.

Because the project proposes land uses that could develop larger scale structures, the project's incremental contribution to a visual contrast to viewers adjacent to the project site, as well as viewers on nearby roads and properties would be cumulatively considerable and thus significant.

The proposed project would contribute to the cumulative increase in ambient light that would exist in combination with other development, and the project's contribution to new light sources and glare that could create hazards would be considerable and thus significant.

Light sources associated with cumulative development cannot be fully mitigated and would be a significant cumulative impact.

TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.2 Agricultural Resources			
5.2-1 The proposed project could convert Important Farmland (Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance) as defined in the California Department of Conservation Farmland Mapping and Monitoring Program to non-agricultural use.	S	None available.	SU
5.2-2 The proposed project could conflict with existing zoning for agricultural use or with a Williamson Act contract.	S	None available.	SU
Cumulative Impacts **With or without implementation of the project, the trend of land conversion from agricultural uses to urban and other non-agricultural uses (including wildlife habitat enhancement) in the Central Valley would continue. This would be a significant cumulative impact.** **Conservation of off-site agricultural land would not fully mitigate the project's cumulatively considerable contribution to the loss of agricultural land in San Joaquin County; therefore, cumulative impacts would be significant and the project's incremental contribution would also be significant.**			
5.3 Air Quality			
5.3-1 Construction activities could generate substantial concentrations of criteria air pollutants, including fugitive dust.	PS	5.3-1 The construction contractor shall implement the following measures during construction activities: • Require that all diesel engines be shut off when not in use to reduce emissions from idling. • Minimize the obstruction of traffic on adjacent roadways. • Water the active construction area three times per day during grading activities. • Use low-VOC paint during the painting of all residential and non-residential structures.	SU

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.3-2 Operation of the proposed project would generate emissions that may exceed SJVAPCD thresholds for ROG, NO_x and PM_{10}.	PS	5.3-2 (a) The project applicant shall achieve residential, commercial, and industrial energy efficiency that exceeds 2008 Title 24 standards by 15 percent. The applicant shall demonstrate achievement of 15 percent exceedance to the City prior to approval of building permits. (b) The City shall verify, prior to approval of building permits, that natural gas fireplaces will be incorporated into all residential development, in place of wood and/or pellet burning stoves/fireplaces. (c) The City shall require residential and nonresidential development to use low VOC paint and electrical landscape equipment through deed restrictions. (d) The project applicant shall incorporate electrical outlets into the exterior design of all proposed structures to promote the use of electrical landscape equipment.	SU
5.3-3 Uses developed within the proposed project could expose sensitive receptors to project-generated toxic air emissions.	PS	5.3-3 Prior to approval of a Final Map, the project applicant(s) shall coordinate with the SJVAPCD during the initial stages of an individual project design to determine the potential TAC risk of that use type and scale. Further, the City shall ensure during the plan approval stage that loading docks are located away from existing/proposed residential structures, to the maximum extent feasible.	SU
5.3-4 Implementation of the proposed project could expose sensitive receptors to toxic air emissions from the adjacent SR 99.	PS	5.3-4 No residential structure shall be located within 250 feet of the nearest travel lane of SR 99 to the project site and/or 200 feet from centerline of the railroad.	LS
5.3-5 Operation of the proposed project would generate increased local traffic volumes, which would increase localized carbon monoxide (CO) concentrations in the area.	LS	None required.	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
Cumulative Impacts **The proposed project would make a cumulatively considerable contribution during construction with regard to SJVAPCD-identified criteria pollutants. This would be a significant cumulative impact.** **The proposed project's contribution to ROG and NOx criteria pollutant emissions would be cumulatively considerable. This would be a significant cumulative impact.** **Project-generated toxic air emissions would contribute to emissions from other projects, increasing the potential for health risks. This would be a significant cumulative impact.**			
5.4 Biological Resources			
5.4-1 The proposed project could result in the loss of nesting burrowing owl and burrowing owl nesting habitat.	S	5.4-1 (a) Discourage the presence of ground squirrels, which would discourage burrowing owls from occupying construction areas, by following one or more measures outlined in Section 5.2.4.15 of the SJMSCP, such as planting and/or retention of tall herbaceous vegetation, regular disking, or physical and chemical control of ground squirrels. Within 30 days prior to construction, the project applicant shall retain a qualified biologist to conduct a survey for burrowing owl in all appropriate habitat within 250 feet of the project site. The survey shall follow the 1995 CDFG Burrowing Owl Survey protocol. (b) Avoid all construction project related disturbances within a 250-foot protective buffer around the nest burrow during the breeding season. Where feasible, preserve nest burrows and burrow complexes and at least 6-acres of adjacent foraging habitat in place (i.e., in a 6-acre open space preserve).	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Where avoidance is not feasible, owls can be passively relocated ONLY during non-breeding season (September 1 through January 31). Passive relocation of burrowing owls, as described in the 1995 CDFG Burrowing Owl Survey Protocol, shall only be conducted in consultation with the CDFG. No disturbance shall be allowed within 250 feet of a nest site during breeding season, until and unless the CDFG Technical Advisory Committee, with the concurrence of the permitting agencies' representatives on the Technical Advisory Committee, or a qualified biologist approved by the permitting agencies, verifies through non-invasive means that either (1) the birds have not begun egg laying or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. After the fledglings are capable of independent survival, the burrow can be removed.	
5.4-2 The proposed project could result in the loss of nesting habitat for Swainson's hawk, white-tailed kite, and other protected raptors.	S	5.4-2 (a) If construction is to occur between February 16 through August 30, the project applicant, in consultation with the SJCOG and CDFG, shall conduct a pre-construction breeding-season survey of the project site within 30 days prior to when construction is planned to begin. The survey shall be conducted by a qualified biologist to determine if any birds are nesting on or within 100 feet of the construction area. (b) The project applicant, in consultation with the SJCOG and CDFG, shall avoid all bird nest sites located in the project site during the breeding season (approximately February 16 through August 30) while the nest is occupied with adults and/or young. This avoidance could consist of delaying construction to avoid the nesting season. Any occupied nest shall be monitored by a qualified biologist to determine when the nest is no longer used. If the construction cannot be delayed, avoidance shall include the establishment of a non-disturbance buffer zone around the nest site. The size of the buffer zone shall be two times the dripline diameter from the	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		nest, or 100 feet. The buffer zone shall be delineated by highly visible temporary construction fencing. Removal of nest trees shall only occur outside the nesting season (non-breeding season), and only in consultation with the SJCOG and CDFG.	
5.4-3 The proposed project could result in the loss of foraging habitat for Swainson's hawk.	S	5.4-3 The project applicant shall comply with the SJMSCP through payment of mitigation fees for the appropriate amount of natural and agricultural habitat as described in the SJMSCP. Details of the mitigation fee and acreage amounts shall be determined in consultation with the SJCOG, but will generally include payment of fees to the SJMSCP to compensate for loss of Agriculture and Natural habitat at a 1:1 ratio.	LS
5.4-4 The proposed project could result in the loss and disturbance of trees protected by the City of Manteca's ordinances.	S	5.4-4 Prior to the issuance of a grading permit, a tree survey shall be conducted by a qualified arborist to enumerate and evaluate all trees on the proposed project site that meet the standards in the applicable Manteca Municipal Code. Trees that are subject to protection but are proposed to be removed as a result of project implementation shall be replaced in accordance with tree planting specifications established by the Manteca Municipal Code (17.19.060). The project applicant shall meet the replacement guidelines outlined in the City's tree ordinance. Replacement trees shall be planted on-site at a location in the general vicinity that is agreeable to the City and shall be monitored in accordance with monitoring protocols agreed to by the City. If monitoring indicates that replacement plantings are not meeting performance standards, remedial measures, determined in coordination with the City, shall be implemented.	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.4-5 The proposed project would be consistent with the mitigation requirements of the San Joaquin Multi-Species Habitat Conservation and Open Space Plan.	PS	5.4-5 Implement Mitigation Measures 5.4-1 through 5.4-4.	LS
Cumulative Impacts **The conversion of plant and wildlife habitat on a regional level would result in a cumulatively significant impact on biological resources.** **The project site represents relatively low habitat value and consists of habitat types that are wide spread in the region, and the proposed project's contribution to the loss of plant and wildlife habitat in the region would be less than considerable.**			
5.5 Cultural Resources			
5.5-1 The proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines.	NI	None required.	NI
5.5-2 The proposed project could cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 of the CEQA Guidelines or disturb human remains, including those interred outside of formal cemeteries.	PS	5.5-2 (a) In the event that any prehistoric or historic subsurface archaeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits, animal bone, obsidian and/or mortar are discovered during construction-related earth-moving activities, all ground-disturbing activity within 100 feet of the resources shall be halted and the City of Manteca Community Development Department shall be notified. The City shall consult with a qualified archeologist retained at the applicant's expense to assess the significance of the find. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), representatives of the City and the qualified archaeologist shall meet to determine the appropriate course of action, with the City making the final decision. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report shall be prepared by the qualified archaeologist according to current professional standards.	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		If the archaeologist determines that some or all of the affected property qualifies as a Native American Cultural Place, including a Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine (Public Resources Code §5097.9) or a Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the California Register of Historical Resources pursuant to Public Resources Code §5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site (Public Resources Code §5097.993), the archaeologist shall recommend to the City potentially feasible mitigation measures that would preserve the integrity of the site or minimize impacts on it, including any or a combination of the following: • Avoidance, preservation, and/or enhancement of all or a portion of the Native American Cultural Place as open space or habitat, with a conservation easement dedicated to the most interested and appropriate tribal organization. If such an organization is willing to accept and maintain such an easement, or alternatively, a cultural resource organization that holds conservation easements; • An agreement with any such tribal or cultural resource organization to maintain the confidentiality of the location of the site so as to minimize the danger of vandalism to the site or other damage to its integrity; or • Other measures, short of full or partial avoidance or preservation, intended to minimize impacts on the Native American Cultural Place consistent with land use assumptions and the proposed design and footprint of the development project for which the requested grading permit has been approved.	

TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		• After receiving such recommendations, the City of Manteca shall assess the feasibility of the recommendations and impose the most protective mitigation feasible in light of land use assumptions and the proposed design and footprint of the development project. The City shall, in reaching conclusions with respect to these recommendations, consult with both the project applicant and the most appropriate and interested tribal organization. (b) If human remains are discovered at any project construction sites during any phase of construction, all ground-disturbing activity within 50 feet of the remains shall be halted immediately, and the City of Manteca Community Development Department and the County coroner shall be notified immediately. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The project applicant shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. As necessary, the archaeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The City shall be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in CEQA Guidelines section 15064.5(e) and Public Resources Code section 5097.98. The project applicant shall implement approved mitigation, to be verified by the City, before the resumption of ground-disturbing activities within 50 feet of where the remains were discovered.	

TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
Cumulative Impacts **The proposed project would contribute to the effects of development in San Joaquin County and the impact on cultural resources is considered cumulatively significant.**			
5.6 Noise			
5.6-1 Construction of the proposed project could result in a substantial temporary increase in ambient noise levels experience by existing and project-related sensitive receptors.	LS	5.6-1 (a) The project applicant shall require by contract specifications that the following construction best management practices (BMPs) be implemented by the project contractors to reduce construction noise levels: • Two weeks prior to the commencement of construction, notification must be provided to surrounding land uses within 300 feet of the project site disclosing the construction schedule, including the various types of activities that would be occurring throughout the duration of the construction period • Ensure that construction equipment is properly muffled according to industry standards and be in good working condition • Implement noise attenuation measures, which may include, but are not limited to, temporary noise barriers or noise blankets around stationary construction noise sources • Use electric air compressors and similar power tools rather than diesel equipment, where feasible • Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		• Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding owners and residents to contact the job superintendent. If the City or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party. Contract specifications shall be included in the proposed project construction documents. (b) The project applicant shall require by contract specifications that construction staging areas along with the operation of earthmoving equipment within the project area would be located as far away from vibration and noise sensitive sites as possible. Contract specifications shall be included in the proposed project construction documents. (c) The project applicant shall require by contract specifications that heavily loaded trucks used during construction would be routed away from residential streets to the extent feasible. Contract specifications shall be included in the proposed project construction documents.	
5.6-2 Operation of land uses associated with the proposed project could result in a substantial increase in local traffic noise levels over existing and future noise levels without the project.	PS	None available	SU
5.6-3 Operation of land uses associated with the proposed project could result in a substantial increase in ambient noise levels associated with the operation of stationary noise sources.	PS	5.6-3 The developer shall provide proper shielding for all new HVAC systems used by the proposed high-density residential and mixed use buildings to achieve an attenuation of 15 dBA at 50 feet from the equipment.	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.6-4 Construction of the proposed project could result in the exposure of sensitive receptors to excessive vibration levels.	PS	5.6-4 Implement Mitigation Measures 5.6-1(a) through 5.6-1(c).	SU
5.6-5 Operation of the proposed project could generate and expose sensitive receptors on site or off site to excessive groundborne vibration or groundborne noise levels.	LS	None required.	LS
5.6-6 Implementation of the proposed project could result in the exposure of sensitive land uses to excessive noise levels associated with the continued operation of the UPRR rail line.	PS	5.6-6 (a) The applicant shall provide a written statement to each residential unit and resident located within 400 feet of the UPRR tracks, notifying them of potential noise and vibration issues associated with the railroad tracks, including the following: **Notice of Disclosure** Each owner's [or renter's] interest is subject to the fact that trains operate at different times of the day on the railway tracks immediately adjacent to a project site; and that by accepting the conveyance of an interest [or lease agreement] in that project, owner [or renter] accepts all impacts generated by the trains. **Posting of Notice of Disclosure in each residential unit** Prior to offering the first residential unit for purchase, lease, or rent, the property owner or developer shall post a copy of the Notice of Disclosure in every unit in a conspicuous location. Also, a copy of the Notice of Disclosure shall be included in all materials distributed for the Project, including but not limited to: the prospectus, informational literature, and residential lease and rental agreements.	SU

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		(b) The applicant shall install a sound attenuating wall that achieves a minimum 10 dBA reduction in noise levels attributable to UPRR operations, as demonstrated through a noise study once a site plan is devised and building types are known. The wall shall be erected prior to occupancy of any residential unit located within 400 feet of the centerline of the UPRR tracks. (c) Implement Mitigation Measure 5.3-4.	
5.6-7 Implementation of the proposed project could result in the exposure of sensitive land uses to excessive vibration levels associated with the continued operation of the UPRR rail line.	LS	None required.	LS
Cumulative Impacts **Because construction of the project, as well as other cumulative development, would likely not occur between the hours of 7 p.m. and 7 a.m., the proposed project and all other cumulative development would be exempt from the standards established in the City's noise ordinance and the City's General Plan, and the cumulative impact associated with construction noise in the Manteca area would be considered less than significant.** **The contribution of the proposed project to future roadway noise levels would exceed the identified thresholds of significance and, therefore, would be considered cumulatively considerable.** **Vibration from future development could potentially combine with construction vibration of the proposed project to result in a potentially significant cumulative impact. The cumulative impact of the proposed project would be significant and unavoidable.** **No substantial sources of groundborne vibration are anticipated to be built as part of the proposed project or surrounding developments. This cumulative impact would be less than significant.**			
5.7 Public Services			
5.7-1 Implementation of the proposed project would increase the demand for fire protection services.	LS	None required.	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.7-2 Implementation of the proposed project would increase the demand for police protection services.	LS	None required.	LS
5.7-3 The proposed could generate additional students.	LS	None required.	LS
Cumulative Impacts **As new development in the City occurs, there would be a corresponding increase in general fund revenues and development impact fees that would be used, in part, to maintain service levels for public services. Therefore, the cumulative impact on fire protection services would be less than significant.** **The development impact fees would be used by the Manteca Police Department to provide additional services and facilities required by growth in the City. Therefore, the cumulative impact on police services in the City would be less than significant.** **Implementation of the proposed project would result in a less-than-significant impact there would not be a cumulative impact to schools. The cumulative impact, therefore, on educational services in the City would be less than significant.**			
5.8 Public Utilities			
5.8-1 Implementation of the proposed project would require the construction of new or expanded water treatment or distribution facilities, the construction of which could cause significant environmental effects.	PS	5.8-1 The project applicant shall construct peaking facilities such as tanks, booster pumps, or wells sufficient such that the system's distribution capacity can accommodate 5,134 gallons per minute. The method by which the capacity is achieved shall be approved by the City.	LS
5.8-2 Implementation of the proposed project would generate an additional demand for water, but would not require water supplies in excess of existing entitlements and resources, or result in the need for new or expanded entitlements.	LS	None required.	LS
5.8-3 Implementation of the proposed project would not exceed wastewater treatment requirements of the Central Valley Regional Water Quality Control Board.	LS	None required.	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.8-4 Implementation of the proposed project would require new sewer connections and could result in the construction of new or expanded wastewater conveyance system.	LS	None required.	LS
5.8-5 Implementation of the proposed project would not increase wastewater generation such that treatment facilities would be inadequate to serve the project's projected demand in addition to the provider's existing commitments.	LS	None required.	LS
5.8-6 Implementation of the proposed project would require the construction of new stormwater drainage facilities and the expansion of existing facilities.	LS	None required.	LS
5.8-7 Implementation of the proposed project could generate solid waste that exceeds the permitted capacity of landfills.	LS	None required.	LS
5.8-8 Implementation of the proposed project could comply with all applicable federal, state, and local statutes and regulations related to solid waste.	LS	None required.	LS
5.8-9 Development proposed under the proposed project would increase the demand for energy, but would not result in the construction of new energy production or transmission facilities.	LS	None required.	LS
5.8-10 Implementation of the proposed project would not result in the wasteful or inefficient use of energy by the proposed project.	LS	None required.	LS
Cumulative Impacts **The City's total water supply is expected to be 34,590 AFY by 2030. The City's Urban Water Management Plan identifies demand in the City to be 35,735 AFY by 2030, which would result in a shortfall of 1,145 AFY by 2030. This is a significant cumulative impact.**			

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
Compliance with applicable waste discharge requirements would ensure that the wastewater Quality Control Facility would not exceed wastewater treatment requirements. Therefore, this would be a less-than-significant cumulative impact. **The City has plans in place to expand wastewater treatment capacity to serve cumulative development in the City, this is considered a less-than-significant cumulative impact.** **Future development projects would be required to include best management practices to reduce stormwater runoff, in compliance with local codes and NPDES permit requirements, so the cumulative impact would be less than significant.** **Cumulative development would pay development impact fees to fund stormwater drainage facilities; therefore, future growth in the City would have a less than significant cumulative impact.**			
5.9 Transportation and Circulation			
5.9-1 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the four intersections around the Austin Road/SR 99 interchange.	S	5.9-1 (a) The project applicant and the City of Manteca shall work with Caltrans to obtain the necessary permits to construct the improvements described below. (b) The project applicant shall construct or fund the following roadway improvements: **Woodward Avenue/Moffat Boulevard** • Construct a southbound right turn lane. • Widen Moffat Boulevard south of the Woodward Avenue intersection to include two lanes in each direction. • The second northbound lane shall be trapped into the left-turn lane to westbound Woodward Avenue **Moffat Boulevard/SR 99 Southbound Off-Ramp** • Install a traffic signal. • Widen the off-ramp as far as feasible to construct separate left and right-turn lanes at the off-ramp approach to the intersection. • Widen the approaches and departures on Moffat Boulevard to include two lanes in each direction.	SU

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Austin Road/SR 99 Northbound Ramps • Install a traffic signal. • Widen the northbound Austin Road approach to accommodate a left-turn lane and shared left-through lane at the intersection. **Austin Road/Moffat Boulevard** • Install a traffic signal that is pre-empted by the crossing protection devices at the adjacent Union Pacific Railroad crossing arms. • Widen the southbound approach to include a shared left-through lane and a separate right-turn lane. • Widen south-eastbound Moffat Boulevard approach to include separate left-turn, through, and right-turn lanes. • Widen the north-westbound departure on Moffat Boulevard to include two lanes. (c) The City of Manteca shall work with Caltrans, SJCOG, and the City of Ripon to develop a sub-regional impact fee program to generate funds to relocate the Austin Road/SR 99 interchange. The project applicant shall pay the appropriate Austin Road interchange fee to assist in the implementation of the new interchange. The project applicant and the City shall also work to implement an extension of Woodward Avenue to Austin Road by doing the following: • The project applicant shall dedicate sufficient right of way to allow for the realignment of Woodward Avenue to intersect with Austin Road south of the Union Pacific Railroad crossing.	

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		• The City of Manteca shall update the PFIP to include the realignment of Woodward Avenue, a new intersection with a traffic signal at Woodward Avenue Extension/Austin Road, a new intersection with a traffic signal at Woodward Avenue/Woodward Avenue Extension, and a new intersection with a traffic signal at Woodward Avenue/Moffat Boulevard These final two signals shall be pre-empted by the crossing control devices at the adjacent Union Pacific Railroad crossing. • The project applicant shall pay the full PFIP fee at time of building permit approval. • In conjunction with the opening of the Woodward Avenue extension, the project applicant shall pay for or implement the construction of barriers to restrict access from Moffat Boulevard to Austin Road to right-in/right-out movements only. Alternatively, Moffat Boulevard could be closed to traffic immediately south of the existing Woodward Avenue intersection and be converted into a cul-de-sac. (d) The City shall only approve building permits to a point where the ARBPRC project generates up to 919[1] PM peak hour trips. A traffic study shall be required for any potential development to confirm the PM peak hour trip generation of the proposed and approved development in the ARBPRC. Any building permit approvals beyond this level can only be approved upon the completion of the relocated Austin Road/SR 99 interchange or the completion of a supplemental traffic analysis, which determines that the mitigation measures listed above are no longer necessary or identifies equally effective mitigation.	

1 Up to 1,444 PM peak hour trips could be accommodated if the California Public Utilities Commission allowed the widening of Austin Road to five lanes across the Union Pacific Railroad Tracks.

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.9-2 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels at the Main Street/Eastbound SR 120 Ramps signalized intersection.	S	5.9-2 The project applicant shall pay for/implement the following intersection improvements at the Main Street/Eastbound SR 120 Ramps intersection: • Lengthen the eastbound right turn lane to 600 feet and the northbound right turn to 500 feet; and • Re-time the traffic signal.	SU
5.9-3 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Main Street/Atherton Drive intersection.	S	5.9-3 Implement Mitigation Measure 5.9-2.	SU
5.9-4 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Main Street/Woodward Avenue intersection.	S	5.9-4 (a) The City shall update the PFIP project list to include new traffic signal at the Main Street/Woodward Avenue intersection. The City must also ensure that the intersection improvement is constructed at such a time that a traffic analysis determines that the improvements are warranted. (b) The project applicant shall pay the full PFIP fee for local roadway improvements at the time building permits are issued. (c) The City could establish a fair-share payment program in Southern Manteca and require the project applicant to either construct the traffic signal or pay a fair-share payment to be calculated at time the signal is required (assuming that the City or another party constructs the traffic signal).	LS
5.9-5 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Van Ryn Avenue/Industrial Park Drive intersection.	S	5.9-5 (a) The City shall update the PFIP project list to include a new traffic signal or roundabout at the Van Ryn Avenue/Industrial Park Drive intersection. The City must also ensure that the intersection improvement is constructed at such a time that a traffic analysis determines that the improvements are warranted.	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation
				(b) The project applicant shall pay the full PFIP fee for local roadway improvements at the time building permits are approved. or (c) The City could establish a fair-share payment program in Southern Manteca and require the project applicant to either construct the traffic signal or pay a fair-share payment to be calculated at time the signal is required (assuming that the City or another party constructs the traffic signal).	
5.9-6	**The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Woodward Avenue/Atherton Drive intersection.**	S	5.9-6	(a) The City shall update the PFIP project list to include a new traffic signal at the Woodward Avenue/Atherton Drive intersection. The City must also ensure that the intersection improvement is constructed at such a time that a traffic analysis determines that the improvements are warranted. (b) The project applicant shall pay the full PFIP fee for local roadway improvements at the time building permits are approved. or (c) The City could establish a fair-share payment program in Southern Manteca and require the project applicant to either construct the traffic signal or pay a fair-share payment to be calculated at time the signal is required (assuming that the City or another party constructs the traffic signal).	LS
5.9-7	**The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Austin Road/Ripon Road intersection.**	S	5.9-7	The City of Manteca shall work with the City of Ripon and San Joaquin County to develop a fair-share funding program for improvements at this intersection. Based on this fair-share program, the project applicant shall pay its fair-share for the following improvements at the Austin Road/Ripon Road intersection: • Install a traffic signal.	SU

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		• Widen the north leg of the intersection to two lanes in each direction for at least 600 feet. • Widen the east leg of the intersection to two lanes in each direction for at least 600 feet. • Provide a channelized westbound right turn lane at the intersection. • Provide a left-turn lane, and a shared left, through, right-turn lane on the southbound approach. In order to implement the improvement, the project applicant may be required to construct the improvements above, but will be provided with a right of reimbursement from third parties who benefit from the intersection improvements.	
5.9-8 The proposed project would cause an increase in traffic which would degrade or exacerbate unacceptable LOS on 13 freeway mainline segments near the project.	S	5.9-8 The project applicant shall pay the San Joaquin County Regional Transportation Impact Fee prior to the approval of building permits.	SU
5.9-9 The proposed project would cause an increase in traffic which would degrade or exacerbate unacceptable operations at freeway merge, diverge, and weaving areas near the project.	S	5.9-9 The project applicant shall pay the San Joaquin County Regional Transportation Impact Fee as building permits are approved.	SU
5.9-10 The proposed project would generate new pedestrian travel within the site.	PS	5.9-10 The City shall review the pedestrian circulation of the ARBPRC as more detailed plans are developed. The City shall require the developer to address any design features that would lead to overly circuitous pedestrian circulation or other issues that discourage pedestrian travel.	LS
5.9-11 The proposed project would generate new bicycle travel within the site.	PS	5.9-11 The City shall review the bicycle circulation of the ARBPRC as more detailed plans are developed. The City shall require the developer to include bicycle facilities that are required by the City's Bicycle Master Plan, or City code. The City shall make recommendations for other improvements that could enhance the bicycle environment of the ARBPRC area.	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.9-12 The proposed project may create an ultimate need for transit service to the site.	PS	5.9-12 The City shall review the ARBPRC site plan to ensure that potential future transit is adequately accommodated within the site. The City shall make recommendations for transit facilities so that future service is not precluded in the area.	LS
5.9-13 The proposed project would generate new travel across at-grade railroad crossings.	PS	None required.	SU
5.9-14 The proposed project would generate traffic on new internal project roadways.	PS	5.9-14 The project applicant shall construct the internal project roadways with the lane widths shown in Figure 5.9-11.	LS
Transportation and Circulation Cumulative Impacts			
5.9-15 The proposed project would cause an increase in traffic which would degrade the signalized intersection operations to unacceptable levels at the Main Street/SR 120 Ramp terminal intersections.	S	5.9-15 The project applicant shall pay the updated PFIP interchange fee, or if this fee is not yet in place, the project shall pay a fair-share fee for the Main Street/SR 120 interchange improvements.	SU
5.9-16 The proposed project would exacerbate unacceptable operations at the Main Street/Atherton Drive intersection.	S	5.9-16 Implement Mitigation Measure 5.9-15.	SU
5.9-17 The proposed project exacerbates unacceptable operations at the Main Street/ Woodward Avenue intersection.	S	5.9-17 The City shall update the PFIP Transportation Project List to include the following project at the Main Street/Woodward Avenue intersection. • Install a traffic signal; • Construct two left, one through, and a shared through-right lane on the southbound approach. • Construct one left, one through, and a shared through-right lane on the northbound approach. • Construct a second through lane and add a receiving lane west of Main Street that extends at least 600 feet. • Construct separate left, through, and right-turn lanes on the eastbound approach.	SU

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		To implement these measures, widening in the northwest and southwest quadrants of the intersection would be necessary. Consistent with past practices, the City would require right-of-way dedications in these quadrants (in conjunction with planned residential developments) to ensure that the above improvements can be constructed. The City shall update the PFIP project list to include roadway widening on Main Street to accommodate the intersection improvements. The City shall also require that all future development projects pay the PFIP fee for local roadways at the time of building permit approval.	
5.9-18 The proposed project would exacerbate unacceptable operations at the Van Ryn Avenue/Industrial Park Drive intersection.	S	5.9-18 The City shall update the PFIP Transportation Project List to include a roundabout or new traffic signal at the Van Ryn Avenue/Industrial Park Drive intersection. Any new traffic signal shall be pre-empted by the crossing protection devices at the adjacent Union Pacific Railroad crossing and be coordinated with the Moffat Boulevard/Spreckels Avenue intersection. The City shall also require that all future development projects pay the PFIP fee for local roadways at the time of building permit approval.	LS
5.9-19 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Woodward Avenue/Van Ryn Avenue intersection.	S	5.9-19 The City shall update the PFIP Transportation Project list to include a new traffic signal at the Van Ryn Avenue/Woodward Avenue intersection. It is also recommended that the City update the PFIP project list to include the widening of Woodward Avenue to four lanes between Bridewell Avenue and Austin Road The City shall also require that all future development projects pay the PFIP fee for local roadways at the time of building permit approval.	LS
5.9-20 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Woodward Avenue/Pillsbury Road intersection.	S	5.9-20 The City shall update the PFIP Transportation Project list to include a new traffic signal at the Woodward Avenue/Pillsbury Avenue intersection. It is also recommended that the City update the PFIP project list to include the widening of Woodward Avenue to four lanes between Bridewell Avenue and Austin Road The City shall also require that all future development projects pay the PFIP fee for local roadways at the time of building permit approval.	LS

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
5.9-21 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Woodward Avenue/Atherton Drive intersection.	S	5.9-21 The City shall update the PFIP Transportation Project list to include a new traffic signal at the Woodward Avenue/Atherton Drive intersection. It is also recommended that the City update the PFIP project list to include the widening of Woodward Avenue to four lanes between Bridewell Avenue and Austin Road The City shall also require that all future development projects pay the PFIP fee for local roadways at the time of building permit approval.	LS
5.9-22 The proposed project would exacerbate unacceptable operations at the four intersections around the Austin Road/SR 99 interchange.	S	5.9-22 Include the following intersection modification at the Austin Road/Yosemite Avenue intersection in the PFIP project list: • Construct an additional eastbound right-turn lane. In addition, the project applicant shall pay a fair-share fee to construct separate eastbound left and right-turn lanes at the Jack Tone Road/Graves Road intersection. The City shall also require that all future development projects pay the PFIP fee for local roadways at the time of building permit approval.	SU
5.9-23 The proposed project would exacerbate unacceptable operations at the Austin Road/Ripon Road intersection.	S	5.9-23 Implement Mitigation Measure 5.9-1 and 5.9-7.	SU
5.9-24 The proposed project would exacerbate unacceptable freeway mainline operations on all 16 freeway mainline segments near the project.	S	5.9-24 The project applicant shall pay the San Joaquin County Regional Transportation Impact Fee prior to the approval of building permits.	SU
5.9-25 The proposed project would cause an increase in traffic which would exacerbate unacceptable operations at freeway merge, diverge, and weaving areas near the project.	S	5.9-25 Implement Mitigation Measure 5.9-24.	SU
5.10 Global Climate Change			
5.10-1 The proposed project would contribute to greenhouse gas emissions.	PS	5.10-1 The Project shall prepare and implement GHG emissions reduction plans for all areas to be developed within the Project site, and shall implement all feasible construction-related and long-term GHG emission reduction strategies.	SU

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		For each tentative small lot subdivision map application or grading permit application for areas of the project site to be developed without further subdivision, the Project applicant shall prepare and submit to the City a GHG reduction plan. Each GHG emissions reduction plan shall identify all feasible measures to reduce construction-related and long-term GHG emissions associated with development and land uses within the subject area and shall demonstrate compliance with applicable state and local greenhouse gas emission reduction regulations in effect at the time of each tentative small-lot map or grading plan application. Prior to the City's approval of each tentative small-lot map or grading plan, the City shall review and approve the GHG emissions reduction plan, verify that the plan achieves all feasible GHG emission reduction strategies and shall require that the Project implement all feasible strategies identified in the plan. Construction-related GHG emission reduction measures to be considered for feasibility and incorporation to the GHG emissions reduction plan shall include, but not be limited to, the following: (a) Retrofit diesel-powered equipment with after-treatment products (e.g., engine catalysts and other technologies available at the time construction commences) to the extent that they are readily available and cost effective when construction activities commence. (b) Use alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline) to the extent feasible at the time construction activities commence. (c) Use locally-available building materials, such as concrete, stucco, and interior finishes, for construction of the project and associated infrastructure to the extent feasible.	

TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		(d) Establish a construction management plan with the local waste haulers to divert a target of 50 percent of construction, demolition, and site clearing waste. (e) Implement Mitigation Measure 5.3-2(a). (f) Operational GHG emission reduction measures shall also be included in GHG reduction plans to be developed in conformance with Mitigation Measure 5.10-1(a) - (d). Measures to be considered for feasibility and incorporation in the GHG emissions reduction plan shall include, but not be limited to: 1. Include electric vehicle charging facilities at parking areas of all new homes. 2. Provide the minimal amount of car parking required and increase the amount of bike storage and parking areas at multi-family residential and non-residential projects. 3. Payment of transportation impact fees to fund public transit service. 4. Orient lot configurations to provide convenient access to transportation options. 5. Include energy efficient designs and materials for buildings, appliances, lighting and office equipment. 6. Incorporate use of solar panels, water reuse systems, and composting and on-site renewable energy production when feasible. 7. Include low-emitting furnaces in all residential, commercial, and mixed-use buildings within the Project. 8. Include skylights in structures to reduce the need for general area lighting on sunny days. 9. Participate in local-area recycling programs through provision of convenient recycling bins and separation facilities.	

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TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		10. Incorporate landscape designs that reduce energy and water consumption, such as planting drought resistant native trees that increase area-wide shade and xeriscaping. 11. Prohibit requirements that front and side yards of single family homes be planted with turf grass, and permit and encourage bunch grass and low-water landscaping. 12. Install Energy Star labeled roof materials in all occupied or other conditioned structures. 13. Provide optimized thermal distribution in all occupied and other conditioned structures by separating ventilation and thermal conditioning systems. 14. Provide solar water heaters for all occupied and other conditioned structures. 15. Provide energy efficient appliances (e.g., Energy Star) in all residential units and commercial structures. 16. Equip all occupied and conditioned structures with energy-reducing programmable thermostats that automatically adjust temperature settings. 17. Equip all occupied and conditioned structures with low-water use appliances.	
Cumulative Impacts **The project's incremental contribution to cumulative greenhouse gas emissions during project construction would be less than significant after Mitigation Measures (5.10-1[a] through [d]).** **The construction of residential, industrial, office, and commercial uses under the proposed project would result in additional greenhouse gas emissions, which could represent a substantial contribution to greenhouse gas emissions in California, and as such, this impact is considered cumulatively significant and unavoidable.**			

TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
Initial Study			
Would the project directly or indirectly destroy a unique paleontological resource or unique geologic feature?	PS	CULT-1 Should paleontological resources be identified at any project construction sites during any phase of construction, the construction manager shall cease operation at the site of the discovery and immediately notify the City of Manteca Community Development Department. The project applicant shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe mitigation measures to reduce impacts to a less-than-significant level. In considering any suggested mitigation proposed by the consulting paleontologist, the City of Manteca Community Development Department shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for paleontological resources is carried out.	LS
Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	PS	HAZ-1a) The applicant shall ensure that recommendations for subsurface investigations in areas near existing and former USTs, areas for oil storage, and in the vicinity of leaking irrigation pumps are implemented prior to site preparation. The applicant shall ensure any contaminated sites are remediated to meet State and County regulations and any required remediation shall be completed prior to construction. b) If, during site preparation, visual or olfactory evidence of contamination is observed when soils are disturbed during construction, the applicant shall ensure the location is investigated and remediated to meet State and County regulations and any required remediation shall be completed prior to resuming construction.	LS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		c) Prior to submittal of a small lot tentative subdivision map or plans for residential or other sensitive development, properties not previously evaluated with a current Phase I Environmental Site Assessment may be required to complete a Phase I Environmental Site Assessment. A Phase I Environmental Site Assessment shall be conducted by a qualified professional. If past commercial agricultural uses are disclosed that could have resulted in persistent contamination, soil sampling shall be conducted within former commercial agriculture areas. In these instances, prior to setting conditions for subdivision development, soil investigation shall be conducted according to guidelines developed by the California Department of Toxic Substances Control (DTSC) and contained in the DTSC August 2002 "Interim Guidance for Sampling Agricultural Fields for School Sites", or equivalent protocol. Sampling and site investigation shall be conducted by a California registered environmental professional with applicable permits. As a result of soil investigation, a limited and confined area of contamination may be identified and found to be suitable for simple removal. If this is the case, remediation will be required to meet State and County regulations and be completed prior to recordation of the final small lot subdivision map or equivalent final approval for residential projects. As a result of soil investigation, unconfined and/or widespread residual concentrations of agricultural chemicals may be identified at levels where they individually or in combination meet or exceed US EPA, CalEPA Preliminary Remediation Goals, or equivalent screening levels, thereby indicating the need for risk assessment. Any indicated risk assessment shall be completed prior to improvement plans or equivalent approval. Risk assessments shall include a DTSC Preliminary Endangerment Assessment or no further action determination, or equivalent.	

TABLE 3-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Any remedial action indicated by a risk assessment shall be completed and certified prior to recordation of the small lot tentative subdivision final map or equivalent final approval. Remediation shall include a DTSC Remedial Action Workplan, or equivalent, and can include a range of activities, including restrictions on use, soil excavation and disposal off-site, or encapsulation in appropriate areas away from sensitive receptors in the project area.	

4. LAND USE

4.0 LAND USE

INTRODUCTION

This chapter addresses the land use within the Austin Road Business Park and Residential Community (ARBPRC) area and in the project vicinity, including the current and proposed land uses, land use designations, and zoning. Section 15125(d) of the CEQA Guidelines states, "The EIR shall discuss any inconsistencies between the proposed project and applicable general plans and regional plans." Potential inconsistencies between the ARBPRC and the City of Manteca General Plan and the City's Zoning Ordinance are discussed in this chapter.

CEQA does not treat project consequences relating solely to land use, socio-economic, or population, employment, or housing issues as direct physical impacts on the environment. An EIR may provide information regarding land use, planning and socio-economic effects; however, CEQA does not recognize these types of project consequences as typical impacts on the physical environment. The impact assessment focuses on changes in land use, use compatibility, and general plan consistency, to the extent that potential general plan conflicts may lead to physical impacts on the environment. Physical effects on the environment that could result from implementation of the project are addressed in the appropriate technical sections of Chapter 5 of this EIR. Specific to land use, a discussion of Agricultural Resources is included in Section 5.2 of this EIR.

Key source documents used in the preparation of this section include:

- City of Manteca General Plan 2023 (2003)
- Manteca Zoning Ordinance (1992)

A comment raised in response to the Notice of Preparation (see Appendix B) identified concerns that the project developer would, after approval of the project, decrease the acreage of low-density residential uses and increase the acreage for high-density residential units, resulting in an overall increase in the number of units developed and potentially increasing the number of vehicle trips generated. This EIR analyzes the project as proposed and does not speculate as to any potential future changes to the proposed plan. However, if future requests for change in land use are submitted, the proposed changes would be reviewed by the City to determine if they are consistent with the project analyzed in this EIR. If proposed changes are inconsistent with the project analyzed in this EIR, subsequent CEQA analysis would be required. This issue is not addressed further in the EIR. A second comment letter on the NOP suggested that two parcels adjacent to the southern border of the proposed project site should be included in the EIR as a future-conditions analysis. The letter also suggested that there should be a physical buffer between the City of Manteca and the City of Ripon. The area south of the project site is within the City of Ripon's Secondary Urban Area,

which is not anticipated to develop during the 35-year planning period.[1] Land to the east of the project site is designated as the City of Ripon's Primary Urban Area, which is not currently built out, but is expected to build out during the planning period of the Ripon General Plan (2040).[2] Areas immediately south and east of the project site are not designated as Agricultural Reserve Areas in the Ripon General Plan. Lands designated as Agricultural Reserve Areas would serve as agricultural buffers between development adjacent to, but outside of, Ripon's Planning Area and the City of Ripon.[3] The proposed project's compatibility with surrounding land designations is discussed below under Compatibility.

ENVIRONMENTAL SETTING

The project site is approximately 1,049 acres located in unincorporated San Joaquin County within the City of Manteca Sphere of Influence (SOI). The project site is adjacent to the southeast limits of the City of Manteca. The area is generally bounded by East Woodward Avenue to the north, Highway 99 to the east, and is bisected by the existing Austin Road, which runs north-south (see Figure 2-1).

ARBPRC Project Site

Existing Land Uses

A majority of the project site is in active agricultural use. Crops grown onsite include grapes, almonds, corn, oats, and strawberries. The project site includes approximately 183 acres under Williamson Act contract. All of the Williamson Act contracts are under Non-Renewal status. The project proposes that the areas currently under Williamson Act contract remain in agricultural use until the contracts expire, after which those areas could be developed with residential uses. Parcels under Williamson Act contract within the project site and immediately adjacent to the project site are shown on Figure 2-4 in Chapter 2, Project Description.

There are 14 single family residences on the site. These residences are primarily located in the southern portion of the project site along Austin Road south of Sedan Avenue, and in the northern portion of the project site along Austin Road between the Union Pacific Railroad (UPRR) tracks and Palm Avenue. There is also a single family residence at the southeast corner of East Woodward Road and Sedan Avenue. In addition, there is an industrial site west of Highway 99 that is accessed from Palm Avenue. This site is occupied by steel fabricators, parts and servicing for trucks, HVAC (heating, ventilation, and air conditioning), and construction-related businesses such as electrical contracting, drywall, and general construction and remodeling.

1 City of Ripon, City of Ripon General Plan 2040, Volume I, Chapter Two – Land Use and Growth Accommodations, p. 2-9 and Exhibit 2.2.

2 City of Ripon, City of Ripon General Plan 2040, Volume I, Chapter Two – Land Use and Growth Accommodations, p. 2-9 and Exhibit 2.2.

3 City of Ripon, City of Ripon General Plan 2040, Volume I, Chapter Two – Land Use and Growth Accommodations, p. 2-10 and Exhibit 2.2.

A UPRR easement forms the eastern boundary of the project site. There are two at-grade rail crossings at East Woodward Avenue and Austin Road. Local access to the project site includes East Woodward Road, Austin Road, and Sedan Avenue. In addition, several agricultural access roads are present on the project site.

Surrounding Land Uses

Uses to the north of the project site include agricultural support buildings along East Woodward Road, a single-family residential subdivision to the northwest, and commercial uses (Aqua Pool & Spa and Vintage Outdoor Living) to the northeast. Active agricultural uses and one single-family residence are west of the project site. Further to the west, beyond the agricultural fields, is a single-family residential subdivision. Active agricultural uses, a nursery, and scattered residences are located south of the project site. Active agricultural uses and scattered residences, as well as UPRR tracks and Highway 99, are located to the east of the project site.

Planned and Approved Development in the ARBPRC Vicinity[4,5]

There are several residential projects planned near the vicinity of the ARBPRC project site including Diego Country Estates, Lundbom Estates, Tesoro, and Winters Colonial Estates.

Diego Country Estates is located at the southeast corner of the intersection of E. Woodward Avenue and Pillsbury Road. The project seeks to construct 24 single-family residences on 6.34 acres. Approval of the project would require an annexation into the City of Manteca. The project is currently pending. Two other projects, Pillsbury Estates (275 residential units on 80 acres) and Evans Estates (586 residential units on 159 acres), are currently pending for the area west of the project site.

Lundbom Estates is located at 1380 E. Woodward Avenue, near the southeast corner of the intersection of E. Woodward Road and Pillsbury Road. The project seeks to develop 21 single-family residences on 5 acres. This parcel is already within Manteca's city limits. A tentative map has been issued and a development agreement is pending.

The Tesoro subdivision is located northwest of the project site and is bordered by East Woodward Avenue to the south, Spreckles Road to the west, and Atherton Drive to the north and east. Tesoro is developing as three separate developments. The first provides for 492 single-family residential units on 80.71 acres. Approximately 209 permits have been issued and the development is under construction. The second development unit proposes 272 single-family residential units and the third development proposes 220 single-family residential units. Final maps have been issued for both the second and third development units, but no building permits have been issued.

Winters Colonial Estates is located 9202 E. Woodward Avenue, near the southeast corner of the intersection of E. Woodward Avenue and Pillsbury Road. The project proposes 40 single-family

4 City of Manteca, *Community Development Department Residential Activity Report*, October 2009.

5 The Manteca Bulletin, <www.mantecabulletin.com/news/archive/8083/>, (November 18, 2009).

residential units on 5 acres. Approval of the project would require an annexation into the City of Manteca. The project is currently pending.

Current Land Use Designations and Zoning

San Joaquin County General Plan Land Uses

The land use designations of the General Plan define the appropriate types, densities, and function of uses for each land use designation. The project site is designated as General Agriculture (A/G) and Limited Industrial (I/L) in the San Joaquin County General Plan. These designations are defined by the General Plan as follows:

> **General Agriculture (A/G)**. This designation applies to areas suitable for agriculture outside areas planned for urban development where the soils are capable of producing a wide variety of crops and/or supporting grazing; parcel sizes are generally large enough to support commercial agricultural activities; and there exists a commitment to commercial agriculture in the form of Williamson Act contracts and/or capital investments. Typical uses include crop production, feed and grain storage and sales, crop spraying, and animal raising and sales. The density is a maximum of one primary residence per 20 acres.
>
> **Limited Industrial (I/L)**. This designation provides for a range of industrial activities, including production, assembly, warehousing and distribution. Typical uses are light impact manufacturing, warehousing, wholesaling, corporation yards, and distribution. Development and locational criteria apply.

San Joaquin County Zoning

The project site is currently zoned General Agriculture (AG-40) and Warehouse Industrial (I-W). The AG-40 designation requires a minimum parcel size of 40 acres:

> **AG Zone (General Agriculture).** This zone is established to preserve agricultural lands for the continuation of commercial agriculture enterprises. Minimum parcel sizes within the AG Zone are 20, 40, 80 or 160 acres, as specified by the precise zoning.
>
> **I-W Zone (Warehouse Industrial).** This zone is intended to accommodate warehouses and service establishments catering to those uses whose primary distinguishing feature is independence from public sewage disposal systems through the use of septic tanks, without the production of industrial wastes. New lots in this zone are a minimum of 40,000 square feet.

City of Manteca General Plan Land Uses

The land use designations of the General Plan define the appropriate types, densities, and function of uses for each land use designation. The project site currently is designated as Low Density Residential (LDR), Medium Density Residential (MDR), High Density Residential (HDR), General Commercial (GC), Heavy Industrial (HI), and Park (P) in the Manteca General Plan (see Figure 2-3 in Chapter 2, Project Description). These designations are defined by the General Plan as follows:

> **Low Density Residential (LDR)** (2.1 to 8.0 dwelling units per gross acre). 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 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 include small lots and clustered lots as well as conventional large lot detached residences.

Medium Density Residential (MDR) (8.1 to 15 dwelling units per gross acre). The medium density residential use includes single family homes, smaller scale multi-family developments, including garden apartments, townhouses, and cluster housing. The density range will accommodate small-lot single family homes that will typically be smaller in size and more affordable to residents.

High Density Residential (HDR) (15.1 to 25 dwelling units per acre). The high density residential use includes multi-family apartment style housing. 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.

General Commercial (GC) (Floor Area Ratio: 0.6; Maximum Site Coverage: 40%). The General Commercial category provides for wholesale, warehousing, and heavy commercial uses, highway oriented commercial retail, public and quasi-public uses, and similar and compatible uses. The designation is also intended to accommodate visitor commercial, lodging, commercial recreation and public gathering facilities, such as amphitheaters, or public gardens.

Heavy Industrial (HI) (Floor Area Ratio: 0.5; Maximum Site Coverage: 40%). This designation provides for manufacturing, processing, assembling, research, wholesale, and storage uses, trucking terminals, railroad and freight stations, and similar activities that require separation from residential uses due to noise, vibration or other characteristics incompatible with residential use.

Park (P). This designation provides for neighborhood, community and regional parks, golf courses, and other outdoor recreational facilities within urban development. Specific uses include public recreation sites, including ball fields, tot lots and play apparatus, adult softball and soccer playing fields, swimming pools, community center buildings, meeting facilities, libraries, art centers, after school care facilities, art in public places, facilities for night-time recreation, trails benches, interpretive markers, picnic areas, barbecue facilities, landscaping, irrigation, city wells, trees and natural habitat areas.

The project site is also within the City's 10-year planning horizon. The project site comprises the southeast portion of the City's 10-year planning horizon area.

Proposed ARBPRC Master Plan

The City of Manteca prepared the ARBPRC Master Plan to guide the future development of the project site. The Master Plan is intended to define proposed ARBPRC land uses, promote compatibility between the land uses, and ensure that future development of the project site is accomplished in a comprehensive manner that is consistent with the framework of master planned roads, building areas, and open spaces. The primary components of the Master Plan are the Land Use Plan, the Design Guidelines, and the Phasing Plan.

The Land Use Plan establishes the land use categories and zoning districts for the ARBPRC. It sets the land use framework for subsequent development review and defines the boundary limits of the

overall project. In addition to establishing the basic allocation of land uses, the Land Use Plan establishes the primary circulation system. The Land Use Plan is intended to allow flexibility for subsequent subdivision applications that will define the specific mix, configuration, and character of uses in greater deal.

The Design Guidelines apply to heavy industrial, business/professional, commercial, residential, and public uses within the ARBPRC. The guidelines are to be used by development applicants and their consultants in the formulation of specific development proposals. The guidelines will also be used by City of Manteca staff in the review of development proposals according to the terms and conditions of Section 17.49.040 Site Plan Review/Design Review of the Manteca Municipal Code.

The phasing plan defines the sequence of ARBPRC development. There are five phases proposed. The first phase focuses on heavy industrial uses; the second phase focuses on business, professional, and commercial uses; the third phase focuses on residential uses; the fourth phase focuses on general commercial uses; and the fifth focuses on heavy industrial and residential uses.

Proposed Land Use Categories

Proposed land use categories for the ARBPRC are organized into the following categories: LDR, MDR, HDR, Commercial Mixed Use (CMU), GC, Business Industrial Park (BIP), HI, Public Quasi-Public (PQP), and P. All land within the project area would be designated with a land use category, acreage, and dwelling units (see Figure 2-2 in Chapter 2, Project Description). Proposed land use categories for Commercial Mixed Use, Business Industrial Park, and Public Quasi-Public are described below.

> **Commercial Mixed Use (CMU)** (15.1 to 25 dwelling units per acre; Floor Area Ratio: 1.0; Maximum Site Coverage: 50%). The Commercial Mixed Use designation will accommodate a variety of purposes including high density residential, employment centers, retail, commercial, and professional offices.
>
> The mixed use concept would integrate a mix of compatible uses on a single site that include sales, services and activities which residents may need on a daily basis. With pedestrian access, these sites will enable residents to walk or bike for many local trips, instead of driving for convenience trips.
>
> The sites may be integrated vertically with mixed uses above one another, such as residential or office uses over a commercial use. Sites may also be mixed horizontally with the uses side-by-side, but linked together through common walkways, plazas and parking areas. In-fill sites in the existing urban area, particularly along the Main Street, Airport Way and Yosemite Avenue corridors may be developed entirely as multi-family residential projects. Sites developed primarily as residential may also include office and retail components. The Commercial Mixed-Use designation may also be applied to smaller parcels within neighborhoods. These small parcels accommodate a variety of uses, but on a smaller, less intense scale that is compatible with the adjacent residential uses.
>
> The residential component of any Commercial Mixed-Use development shall provide dwellings at densities of 15.1 to 25 units per acre. The residential component shall be considered to be that

portion of a site or plan area allocated exclusively to residential use, net of any commercial or office use.

Commercial Mixed Use developments in the new urbanizing areas of the city may also develop primarily as multi-family residential, but are also intended to provide a commercial and office component designed to serve the surrounding neighborhood. In new urbanizing areas it the mixed-use concept would accommodate approximately 35% of the land area allocated to High-Density Residential use, however, individual sites may be permitted to have significantly higher percentages of residential.

The characteristics of the CMU developments will distinguish them from conventional neighborhood commercial or office development. Figure 2-1 [in the Manteca General Plan] illustrates the plan of a conceptual, neighborhood-scale, commercial mixed use development.

- The CMU developments will be truly mixed use. There will be a strong relationship between the different land uses so that pedestrian access is convenient and there is a clear common design theme.
- The CMU developments will include space for community activities within the center or on an adjacent park. It is intended that the park and neighborhood commercial center together form a neighborhood gathering place for recreation and socializing much as does a small town square.
- Where required, detention facilities will be designed as an amenity within the CMU site landscaping, and may also provide recreation opportunities.
- CMU developments will include public facilities where feasible, such as a post office, library, fire station, or satellite government office.
- CMU developments may also include neighborhood work centers that provide space for private offices that use telecommunications services such that telecommuters and other residents in the neighborhood may work near their homes.
- CMU developments will have a shared parking program with the objective of reducing the parking required for each individual use.

Business Industrial Park (BIP) (Floor Area Ratio: 1.0; Maximum Site Coverage: 50%). The Business Industrial Park designation is intended to provide sites for large uses in an office park environment that would include multi-tenant buildings. Business parks of this nature are well suited for research and development facilities and also provide an attractive business environment for unrelated businesses. Typical uses permitted within the Business Industrial Park land use include:

- administrative and general office
- corporate or regional headquarters
- research and development facilities
- medical offices
- professional services such as attorneys, accountants and insurance
- light industrial, including manufacturing and assembly

Warehouse, storage and distribution shall be for the purpose of supporting the industrial uses and shall be limited to not more than 20% of the total land area in any Business-Industrial Park use. Commercial storage facilities (mini-storage) that are compatible with the landscape and building

design standards for the business park will be permitted. All outdoor storage shall be screened so to not be visible from any public street or highway.

The business industrial park land use will also permit a limited amount of service commercial and retail activities provided for the convenience of the employees within the area. The goal is to provide a mix of basic services in close proximity to employees to reduce daily convenience trips. Typical service uses include restaurants, banks, day care, and personal services, such as hair care and shoe repair, specialty retail, and similar uses. Such uses may not account for more than ten percent (10%) of the total gross floor area allowed for the individual parcels. Convenience services within the business-professional land use should be distributed within the area to be easily accessible by employees. These uses should generally be located within the building complexes and not as freestanding structures.

The Business Industrial Park uses shall incorporate the following characteristics.

- Common recreation/open space, landscaping, dining and meeting areas are amenity features that are desirable within all business-park developments.
- Required detention facilities shall be incorporated in the site landscaping as a visual amenity.
- A common area lighting, landscaping and signage theme shall be adopted and applied throughout the business park.
- Pedestrian paths shall be provided on site and connecting between sites within the business park.

Public Quasi-Public (PQP). This designation provides for government owned facilities, public and private schools, institutions, civic uses and public utilities, and quasi-public uses such as hospitals and churches.

Proposed Zoning Districts

Because the project site is outside the Manteca city limits, the project site is not currently zoned by the City of Manteca. Proposed zoning designations are organized into the following categories: Single Family Residential District (R-1). Limited Multiple-Family Residential District (R-3), Multiple-Family Residential District (R-4), Community Commercial District (C-C), General Commercial District (G-C), Heavy Industrial District (M-2), Business Industrial Park District (BIP), Public Quasi-Public District (Basin, Expo, Open Space, Railroad, or Park-Basin) (PQP), and Right-of-Way (ROW) (see Figure 2-5 in Chapter 2, Project Description).

As discussed above, the project site is not zoned by the City because the site is outside the Manteca city limits. During the annexation and prezone process, the City would give the project site a zoning classification. State law requires the zoning classification to be consistent with the general plan land use diagram or subsequent general plan amendments.

REGULATORY SETTING

Federal Regulations

There are no applicable federal agencies, plans, or policies that oversee local planning issues.

State Regulations

California Government Code Section 65300 et seq. establishes 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 for flexibility in the approach taken to achieve the plan's goals.

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 Regulations

San Joaquin County General Plan

The San Joaquin County General Plan is a policy guide for physical and economic growth of the County. The policy document of the General Plan is made up of a total of 10 elements, with each element containing objectives and policies intended to guide development in San Joaquin County. The following are applicable objectives and policies relating to land use from the San Joaquin County General Plan Community Development section.

General Land Use

Objectives

1. To ensure that there is an adequate amount of land planned for urban development to accommodate the projected population growth in areas where the appropriate level of services are or can be made available.

Policies

1. Urban communities shall:
   a. be planned to accommodate most of the County's projected growth;
   b. be planned with a variety of land uses;
   c. be planned to receive urban services, including community wastewater treatment, water, and storm drainage.
5. Development should be orderly and compact.

6. Development should occur on vacant lots within existing communities as "infill" before extending beyond the current developed areas of a community.

9. Mixed use development (a combination of residential, commercial, and/or civic uses) shall be encouraged in urban communities, provided it does not create land use conflicts and provides for a close physical and functional relationship of project components.

10. Development shall be compatible with adjacent uses.

Residential Development

Objectives

1. To promote quality living environments for County residents.

2. To provide a variety of living environments.

Commercial Development

Objectives

1. To provide commercial areas in appropriate locations to serve their market areas.

2. To encourage the grouping of compatible commercial uses within compact areas and to discourage commercial sprawl.

Industrial Development

Objectives

1. To encourage the development of environmentally acceptable industries.

2. To protect designated industrial areas from incompatible land uses.

Interjurisdictional Coordination

Objectives

2. To foster communication and recognize planning efforts in the cities and other jurisdictions.

City of Manteca General Plan

The City of Manteca General Plan is a policy guide for physical and economic growth of the city. The policy document of the General Plan is made up of a total of 10 elements, with each element containing goals and policies intended to guide development in Manteca. The following are applicable goals and policies relating to land use from the City of Manteca General Plan Land Use Element.

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.

Policies

LU-P-1 Growth shall mitigate its own impacts and shall provide a positive benefit to the City of Manteca.

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.

LU-P-3 The City shall encourage a pattern of development that promotes the efficient and timely development of public services and facilities.

LU-P-4 The City shall encourage a development pattern that is contiguous with the boundary of the City.

LU-P-7 All lands within the Primary and Secondary Urban Service Boundary lines to be ultimately developed to urban standards should be developed under the jurisdiction of the City of Manteca. Pending annexation to the City, all such lands should remain in agricultural, open space, or other low intensity uses. The City shall work cooperatively with the County to ensure that development approved by the County on unincorporated lands within the Primary and Secondary Urban Service Boundary lines is developed according to standards consistent with those of the City of Manteca. The City shall request all proposals for development on unincorporated lands within the Primary and Secondary Urban Service boundary lines be referred to the City for review and comment prior to formal consideration by the County.

LU-P-8 The City will review proposals for residential, commercial or industrial development in unincorporated areas within the General Plan Study Area. Urban development should occur within the City boundary.

LU-P-9 The City will consider applications for annexations that:

- are contiguous with city boundaries and provide for a logical expansion of the city;
- create clear and reasonable boundaries;
- ensure the provision of adequate municipal services;
- reflect a long-term fiscal balance to the city and its residents, when reviewed cumulatively with other annexations;
- are consistent with State law and San Joaquin County Local Agency Formation Commission standards; and
- are consistent with the General Plan.

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.

Policies

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 low-, low-, and moderate-income households.

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.

LU-P-16 The City shall promote the preservation and integrity of existing stable residential neighborhoods.

LU-P-17 The City shall encourage neighborhood revitalization and improvement including replacement, renovation or conversion to alternative use of buildings in serious disrepair.

LU-P-18 The City shall seek funding to undertake neighborhood improvement programs designed to stabilize and enhance the quality of existing neighborhoods. Such improvements may include, but are not limited to sidewalk upgrade and repair, street tree programs, street lighting, signage, trash collectors, bus stop shelters and benches and similar improvements to the public areas.

Goal LU-3 Provide adequate land for the development of commercial uses that provide goods and services to Manteca residents and Manteca's market area.

Policies

LU-P-19 The City shall promote and assist the maintenance and expansion of Manteca's commercial sector to meet the needs of both Manteca residents and those living within Manteca's market area.

LU-P-20 The City shall promote the establishment, maintenance and expansion of businesses in Manteca that generate high retail sales taxes as important contributors to the local economy.

LU-P-22 New commercial development serving citywide and regional shopping needs shall be located along major arterial streets.

LU-P-23 New visitor-serving commercial development shall be located in areas with easy access to freeway interchanges.

LU-P-24 New commercial development shall be designed to avoid the appearance of strip development.

LU-P-27 The City shall monitor commercial development to balance growth in residential, commercial and industrial development.

LU-P-28 The City shall monitor revenues relative to new growth to ensure that projected cumulative revenue of all land uses in the City would be sufficient to support public service costs.

LU-P-29 The City shall support and encourage small business development and retention through providing appropriately zoned land and through such programs to reduce development and operations costs as may be available to the City.

Goal LU-4 Provide for land uses that expand employment, education, recreation and cultural opportunities for residents and enhance Manteca as the commercial and service center for southern San Joaquin County.

Policies

LU-P-30 The City shall promote, cooperate in, and assist in the maintenance and expansion of Manteca's industrial sector employment development within the City of Manteca and in the south San Joaquin County area that will help reduce the home-to-work commute distance for Manteca residents.

LU-P-31 New employment centers that may include office, business professional, research and development, and light industrial or industrial development and shall be located in areas served by full City services or served by suitable facilities approved by the City. Employment centers should be located along major arterials with easy freeway access and with access from public transit, and accessible to bicyclists and pedestrians.

LU-P-32 The City shall continue to support full development of its existing industrial park.

LU-P-33 The City shall promote the development of "clean" industries that do not create problems or pose health risks associated with water and air pollution or potential leaks or spills. However, the City will designate appropriate locations that accommodate light industrial and heavy industrial uses.

LU-P-34 Redevelopment incentives shall be used judiciously to promote industrial employment development in approved Project Areas and for projects benefiting approved Project Areas.

LU-P-35 The City shall monitor employment development to maintain the balance of residential, commercial, and industrial development.

LU-P-36 The City shall promote and plan for at least one Primary Employment Center to accommodate a variety of employment opportunities compatible with the employment skills of the Manteca resident labor force.

Goal LU-5 To provide adequate land for development of public and quasi-public uses to support existing and new residential, commercial, and industrial land uses.

Policies

LU-P-37 The City shall designate adequate land, appropriately located for City, County, and School District facilities.

LU-P-38 The City shall designate adequate land, appropriately located for quasi-public uses such as hospitals, churches, private school facilities and utility uses.

LU-P-39 In determining appropriate locations for public and quasi-public uses, the City shall consider, among other things, proximity to major streets, the cost to develop access to public facilities, and the safety of pedestrians and motorists.

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.

Goal LU-6 Provide open space as a framework for the city, and meet the active and passive recreational needs of the community.

Policies

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.

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.

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.

LU-P-44 The City shall develop an Open Space Master Plan that is consistent with the General Plan, the Bicycle Master Plan and Recreation Master Plan. The Open Space Master Plan should address the potential linkages between public plazas, promenades, parks,

utility easements suitable for public access, landscape areas, nature preserves, open drainages, parks and similar public lands and right-of-ways that provide open space. The Open Space Master Plan may also identify future extensions of pedestrian and bikeway corridors, natural features, and nature preserve areas that may be suitable for acquisition by the City as public land or other agency to be held as public land in or in a public trust.

Goal LU-7 Reinforce land use and development patterns that encourage walking and the use of public transit within the community.

Policies

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.

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.

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 open space within neighborhoods. The pedestrian connection should link parks and open space to residential neighborhoods.

Goal LU-8 To reinforce strong urban design, quality development and a compact city form.

Policies

LU-P-49 The City shall give priority to in-fill development and new development contiguous to existing developed areas, whenever practical.

LU-P-53 The City of Manteca shall cooperate with City of Ripon in implementing the principle points of the Memorandum of Understanding regarding future land use and public services and facilities in the area between the two cities.

LU-P-54 The City of Manteca shall cooperate with City of Ripon in identifying a suitable location for an interchange at Highway 99 connecting to major roads in Ripon and Manteca.

San Joaquin County Zoning Ordinance

The San Joaquin County Zoning Ordinance is intended to protect and promote the public health, safety, peace, comfort, convenience and general welfare of residents in the county.

San Joaquin County Right-to-Farm Ordinance

San Joaquin County adopted a Right-to-Farm Ordinance to reduce the loss of the County's commercial agricultural resources by limiting the circumstances under which agricultural operations may be deemed to constitute a nuisance. The Right-to-Farm Ordinance is codified in Title 6, Division 9 of the County's Municipal Code.

6-9001 Findings and Policy

(a) It is the declared policy of the County to preserve, protect and encourage the development and improvement of its agricultural land for the production of food, fiber, and other agricultural products. When nonagricultural land uses extend into agricultural areas, agricultural operations or activities can become the subject of nuisance suits. As a result, agricultural operators are sometimes forced to cease or curtail their operations. Others may be discouraged from making investments in agricultural improvements to the detriment of the economic viability of the County's agricultural industry as a whole. It is the purpose and intent of this chapter to reduce the loss to the County of its agricultural resources by limiting the circumstances under which agricultural operations or activities may be deemed to constitute a nuisance. It is the further intent of this chapter to provide the residents of this County with proper notification of the County's recognition and support of the right to farm agricultural lands.

(b) This chapter is not to be construed as in any way modifying or abridging State law as set out in the California Civil Code, Health and Safety Code, Fish and Game Code, Food and Agricultural Code, Division 7 of the Water Code, or any other applicable provision of State law relative to nuisances; rather it is only to be utilized in the interpretation and enforcement of the provisions of this code and County regulations.

(c) An additional purpose and intent of this chapter is to promote a good neighbor policy by requiring notification to owners, purchasers, residents, and users of property adjacent to or near agricultural operations of the inherent potential nuisance related problems associated with such purchase or residence. Such concerns may include, but are not limited to, the noises, odors, insects, dust, chemicals, smoke and hours of operation that may accompany agricultural operations. It is intended that, through mandatory disclosures, purchasers and users will better understand the impact of living near agricultural operations or activities and be prepared to accept attendant conditions as a normal and necessary aspect of living in a county with a strong rural character and an active agricultural sector.

6-9002 Nuisance.

No agricultural operation or activity, nor any facility or appurtenances thereof, conducted or maintained for commercial purposes, and in a manner consistent with proper and accepted customs and standards as established and followed by similar agricultural operations in the County, shall be or become a nuisance, private or public, if it was not a nuisance at the time it began.

6-9004 Right to Farm Notice.

(a) To provide all property owners with constructive notice of San Joaquin County's right-to-farm policy, the ordinance codified in this chapter shall be recorded with the Clerk-Recorder of the County. The Clerk-Recorder's Office shall keep a copy of the right-to-farm ordinance prominently displayed in the Clerk-Recorder's Office.

(b) For all discretionary approvals of parcel maps or subdivision maps involving agricultural land, or real property located adjacent to agricultural land, the San Joaquin County Community Development Department shall include as a condition of approval that the final recorded map shall contain the following statement: "All persons purchasing lots within the boundaries of this approved map should be prepared to accept the inconveniences or discomforts associated with agricultural operations or activities, such as noise, odors, insects, dust or fumes. San Joaquin County has determined that such inconveniences or discomforts shall not be considered to be a nuisance."

(c) The San Joaquin County Community Development Department shall provide all applicants for building permits for new residential construction or mobile home placement with a "right-to-farm notice" in substantially the form provided in Subsection (e) of this section.

(d) The Treasurer-Tax Collector of the County shall mail a copy of the "right-to-farm notice" in substantially the form provided in Subsection (e) of this section to all owners of real property in San Joaquin County with the annual secured 2004-2005 tax bill and every year thereafter, so long as such notice does not increase the Treasurer-Tax Collector's administrative costs.

Manteca Zoning Ordinance

The purpose of the zoning ordinance is to protect and to promote the public health, safety, peace, comfort, convenience, prosperity and general welfare. More specifically, the zoning ordinance is adopted in order to achieve the following objectives:

A. To provide a precise guide for the physical development of the city in such a manner as to achieve progressively the arrangement of land uses depicted in the Manteca general plan consistent with the goals and policies of the general plan;

B. To foster a harmonious, convenient and workable relationship among land uses;

C. To promote the stability of existing land uses that conform with the general plan and to protect them from inharmonious influences and harmful intrusions;

D. To ensure that public and private lands are ultimately used for the purposes which are most appropriate and most beneficial from the standpoint of the city as a whole;

E. To promote a safe, effective traffic circulation system;

F. To foster the provision of adequate off-street parking and off-street loading facilities;

G. To facilitate the appropriate location of community facilities and institutions;

H. To protect and enhance real property values;

I. To safeguard and enhance the appearance of the city. (Ord. 940 § 1, Ex. A (part), 1992)).

Manteca Right-to-Farm Ordinance

It is the City's policy to preserve, protect and encourage the use of viable agricultural lands 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. Chapter 8.24 of the City's Municipal Code is intended to reduce the occurrence of conflicts between nonagricultural and agricultural land uses within the city. Disclosure statements are required to be provided to and signed by purchasers of property located in the city. In addition, prior to issuance of a city building permit for construction

of a residential building the owner of the property upon which the building is to be constructed shall sign, date and file with the city building department a disclosure statement acknowledging the proximity of agricultural operations and the potential for inconvenience or nuisance associated with those uses.

> 8.24.030 Delivery of disclosure statement by transferor.
>
> The transferor of any property located in the city shall deliver the disclosure statement required by this chapter to the prospective transferee as follows:
>
> A. In the case of a sale, as soon as practicable before transfer of title.
>
> B. In the case of transfer by a real property sales contract, as defined in Section 2985 of the Civil Code, as soon as practicable before execution of the contract. For the purpose of this subsection "execution" means the making or acceptance of an offer. With respect to any transfer subject to subsection A or B, the transferor shall indicate compliance with this chapter either on the receipt for deposit, the real property sales contract, or any addendum attached thereto or on a separate document.
>
> 8.24.050 Disclosure statement—Building permits.
>
> Prior to issuance of a city building permit for construction of a residential building the owner of the property upon which the building is to be constructed shall sign, date and file with the city building department the disclosure statement… (set forth in the Municipal Code)

LAFCO

In California, there is a Local Agency Formation Commission (LAFCO) in each county, consistent with the requirements of Section 56001 of the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000. Each LAFCO is intended to encourage orderly growth and development essential to the social, fiscal, and economic well-being of the state. Specific elements established by the Act encourage orderly development patterns by discouraging urban sprawl and preserving open-space and prime agricultural lands.[6] In order to implement the requirements listed above, LAFCOs have the specific authority to review the following actions:

- annexations to, or detachment from, cities or districts;
- formations or dissolution of districts;
- incorporation or disincorporation of cities;
- consolidation or reorganization or cities and districts;
- establishment of subsidiary districts; and
- development of, and amendments to, spheres of influence.

The objectives of a LAFCO are to encourage the orderly formation of local government agencies, preserve agricultural land, and discourage urban sprawl. LAFCOs review proposals for the formation of new local government agencies and regulate changes, such as boundary lines, of

6 California Government Code, Section 56001.

existing agencies. A LAFCO is the entity that evaluates proposals for the creation of cities or special districts, as well as proposals to annex additional land to local jurisdictions.

Government Code section 56300 provides that all LAFCOs must exercise their powers "in a manner that encourages and provides planned, well-ordered, efficient urban development patterns with appropriate consideration of preserving open space and agricultural lands within those patterns." Section 56377 states that, in reviewing "proposals" that "could reasonably be expected to induce, facilitate, or lead to the conversion of existing open-space lands to uses other than open-space uses," LAFCOs shall consider the following policies: "[d]evelopment or use of land for other than open space uses shall be guided away from existing prime agricultural lands, unless that action would not promote the planned, orderly, efficient development of an area"; and "[d]evelopment of existing vacant or nonprime agricultural lands for urban uses within the existing jurisdiction of a local agency or within the sphere of influence of a local agency should be encouraged before any proposal is approved which would allow for or lead to the development of existing open space lands for non-open-space uses which are outside of the existing jurisdiction of the local agency or outside of the existing sphere of influence of the local agency." Section 56668 provides that, in reviewing a "proposal," a LAFCO shall consider all of the following:

(a) Population and population density; land area and land use; per capita assessed valuation; topography, natural boundaries, and drainage basins; proximity to other populated areas; the likelihood of significant growth in the area, and in adjacent incorporated and unincorporated areas, during the next 10 years.

(b) Need for organized community services; the present cost and adequacy of governmental services and controls in the area; probable future needs for those services and controls; probable effect of the proposed incorporation, formation, annexation, or exclusion and of alternative courses of action on the cost and adequacy of services and controls in the area and adjacent areas.

(c) The effect of the proposed action and of alternative actions, on adjacent areas, on mutual social and economic interests, and on the local governmental structure of the county.

(d) The conformity of both the proposal and its anticipated effects with both the adopted LAFCO policies on providing planned, orderly, efficient patterns of urban development, and the policies and priorities set forth in Section 56377.

(e) The effect of the proposal on maintaining the physical and economic integrity of agricultural lands.

(f) The definiteness and certainty of the boundaries of the territory, the nonconformance of proposed boundaries with lines of assessment or ownership, the creation of islands or corridors of unincorporated territory, and other similar matters affecting the proposed boundaries.

(g) Consistency with city or county general and specific plans.

(h) The sphere of influence of any local agency which may be applicable to the proposal being reviewed.

(i) The comments of any affected local agency.

(j) The ability of the newly formed or receiving entity to provide the services which are the subject of the application to the area, including the sufficiency of revenues for those services following the proposed boundary change.

(k) Timely availability of water supplies adequate for projected needs.

(l) The extent to which the proposal will affect a city or cities and the county in achieving their respective fair shares of regional housing needs.

(m) Any information or comments from the landowner or owners.

(n) Any information relating to existing land use designations.

This EIR would be used by the San Joaquin County LAFCO during their review because the project site would be annexed to the City of Manteca. San Joaquin County LAFCO has adopted a comprehensive list of guidelines and policies to implement its stated objectives; however, some policies are intended to provide guidance to the Commission and are not directly applicable to actions by local jurisdictions. Therefore, only the LAFCO policies that apply to the ARBPRC are addressed in this EIR and would be reviewed by LAFCO during their consideration of the proposed project approvals. As part of State law, a Municipal Services Review (MSR) would be prepared separate from the EIR to analyze the provision of services for the ARBPRC. A MSR evaluates existing and future service conditions and reviews the advantages and disadvantages of various government service structure options. A MSR is intended to assist with the information gathering, evaluation, and approval process associated with any changes to a sphere of influence.

Annexation Policies and Procedures

General Standards for Annexation and Detachment

These standards govern LAFCo determinations regarding annexations and detachments to and from all agencies. The annexations or detachments must be consistent with the general policies set forth in these Policies and Procedures.

1. Spheres and Municipal Service Reviews

   The annexation or detachment must be consistent with the internal planning horizon of the sphere of influence. The land subject to annexation shall normally lie within the first planning increment (5-10 year) boundary. The annexation must also consider the applicable Municipal Services Review and the Sphere of Influence Plan demonstrates that adequate services can be provided with the timeframe needed by the inhabitants of the annexed area. If detachment occurs, the sphere will be modified.

   LAFCo generally will not allow spheres of influence to be amended concurrently with annexation proposals.

   Proposed annexations of land that lie outside of the first planning horizon of the sphere of influence. The land subject to annexation shall normally lie within the first planning increment (5-10 year) boundary. The annexation must also consider the applicable Municipal Services Review and the Sphere of Influence Plan demonstrates that adequate services can be provided with the timeframe needed by the inhabitants of the annexed area. If detachment occurs, the sphere will be modified.

Proposed annexations of land that lie outside of the first planning horizon (5-10 year) are presumed to be inconsistent with the Sphere Plan. In such a case the agency must request LAFCo to consider a sphere amendment pursuant to the above policies. If the amendment is approved, the agency may then proceed with the annexation proposal. A change of organization or reorganization will not be approved solely because an area falls within the SOI of any agency.

As an exception to the presumed inconsistency mentioned above, Master Plan and Specific Plan developments may span several planning horizons of the sphere of influence. Annexation of the entire project area may be desirable in order to comprehensively plan and finance infrastructure and provide for amenity-based improvements. In these cases, no amendment of the planning horizon is necessary provided project phasing is recognized in the Sphere of Influence Plan.

2. Plan for Services

   Every proposal must include a Plan for Services that addresses the items identified in Section 56653 of the Government Code. The Plan for Services must be consistent with the Municipal Service Review of the Agency. Proponents must demonstrate that the city or special district is capable of meeting the need for services.

3. Contiguity

   Territory proposed to be annexed to a city must be contiguous to the annexing city or district unless specifically allowed by statute. Territory is not contiguous if the only connection is a strip of land more than 300 feet long and less than 200 wide, that width to be exclusive of highways. The boundaries of a proposed annexation or reorganization must not create or result in areas that are difficult to serve.

4. Development Within Jurisdiction

   Development of existing vacant or non-prime agricultural lands for urban uses within the existing jurisdiction or within the sphere of influence should be encouraged before any proposal is approved which would allow for or lead to the development of existing open space lands for non-open space uses which are outside of the existing jurisdiction of the local agency or outside of the existing sphere of influence of the local agency. (Section 56377)

5. Progressive Urban Pattern

   Annexations to agencies providing urban services shall be progressive steps toward filling in the territory designated by the affected agency's adopted sphere of influence. Proposed growth shall be from inner toward outer areas.

6. Piecemeal Annexation Prohibited

   LAFCo requires annexations and detachments to be consistent with the schedule for annexation that is contained in the agency's Sphere of Influence Plan. LAFCo will modify small piece-meal or irregular annexations, to include additional territory in order to promote orderly annexation and logical boundaries, while maintaining a viable proposal. In such cases, detailed development plans may not be required for those additional areas but compliance with CEQA is required.

7. Annexations to Eliminate Islands

   Proposals to annex islands or to otherwise correct illogical distortion of boundaries will normally be approved unless they would violate another provision of these standards. In order to avoid the creation of an island or to encourage the elimination [of] an existing island, detailed development plans may not be required for the remnant areas.

8. Annexations that Create Islands

   An annexation will not be approved if it will result in the creation of an island of unincorporated territory [or] otherwise cause or further the distortion of existing boundaries. The commission may nevertheless approve such an annexation where it finds that the application of this policy would be detrimental to the orderly development of the community and that a reasonable effort has been made to include the island in the annexation but that inclusion is not feasible at this time.

9. Substantially Surrounded

   For the purposes of applying the provisions of the Cortese-Knox-Hertzberg Act regarding island annexation without protest hearings (Section 56375.5), the subject territory of an annexation proposal shall be deemed "substantially surrounded" if it is within the sphere of influence of the affected city and two-thirds (66-2/3%) of its boundary is surrounded by the affected city.

10. Definite and Certain Boundaries

    All boundaries shall be definite and certain and conform to lines of assessment or ownership. The Commission's approval of boundary change proposals containing split parcels will typically be subject to a condition requiring the recordation of a parcel map, lot line adjustment or other instrument to avoid creating remnants of legal lots.

11. Service Requirements

    An annexation shall not be approved merely to facilitate the delivery of one or a few services to the detriment of the delivery of a larger number of services or service more basic to public health and welfare.

12. Adverse Impact of Annexation on the Other Agencies

    LAFCo will consider any significant adverse effects upon other service recipients or other agencies serving the area and may condition any approval to mitigate such impacts.

<u>City Annexations</u>

1. Annexation of Streets

   Annexations shall reflect the logical allocation of streets and rights of way as follows:

   - Territory should be included within the annexation to assure that the city reasonably assumes the burden of providing adequate roads to the property to be annexed. LAFCo will require cities to annex streets where adjacent lands that are in the city will generate additional traffic or where annexation will isolate sections of county road. Cities shall include all contiguous public roads that can be included without fragmenting governmental responsibility by alternating city and county road jurisdiction over short section[s] of the same roadway.

- When a street is a boundary line between two cities the centerline of the street may be used as the boundary or may follow a boundary reached by agreement of the affected cities.

2. Pre-Zoning Required

   The Cortese-Knox-Hertzberg Act requires the city to pre-zone territory to be annexed, and prohibits subsequent changes to the General Pan and/or pre-zoning designations for a period of two years after completion of the annexation, unless city council makes a finding at a public hearing consistent with the provisions of Government Code Section 56375(e). In instances where LAFCo amends a proposal to include additional territory, the Commission's approval of the annexation will be conditioned upon the pre-zoning of the new territory.

LAND USE EVALUATION

Methods of Analysis

In the following analysis, the ARBPRC is evaluated for compatibility with the existing and planned land uses in the project vicinity, and for consistency with adopted San Joaquin County and City of Manteca plans and policies, County and City zoning, and LAFCO policies. Environmental impacts resulting from the project are discussed in the respective environmental sections in Chapter 5. An inconsistency is identified if the project does not appear to meet the intent of a specific goal or policy contained in the County's or City's General Plan or any applicable adopted plan. Land use impacts are considered significant if the ARBPRC would conflict with any applicable County or City land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. However, the San Joaquin County Board of Supervisors are ultimately responsible for interpreting the County's General Plan and would determine if the project is inconsistent with any adopted land use goals or policies. Similarly, the City of Manteca City Council is responsible for interpreting the City's General Plan and would determine if the project is inconsistent with any adopted land use goals or policies. This section differs from other discussions in that only plan consistencies are addressed, as opposed to environmental impacts and mitigation measures. This discussion complies with Section 15125(d) of the CEQA Guidelines, which requires an EIR to discuss inconsistencies with general plans and regional plans as part of the environmental setting.

Discussion

Consistency

Adopted Plans and Policies

This section discusses the relationship of the ARBPRC to the adopted land use designations on the project site. This consistency analysis considers the adopted goals and policies of both the San Joaquin County General Plan and the City of Manteca General Plan.

As stated earlier in this chapter, the proposed project was reviewed to determine if it would be generally consistent with applicable General Plan policies. The proposed project would convert farmland to develop heavy industrial, commercial, office, mixed use, residential uses, and public/quasi-public uses on land currently designated for agricultural uses in the County General

Plan. However, the proposed project is located within the ten-year planning horizon of the adopted City of Manteca SOI and is designated for residential, commercial, industrial, and park uses in the Manteca General Plan. Therefore, although much of project site is currently designated for agriculture by San Joaquin County, its ultimate conversion to other uses is anticipated in the adopted Manteca General Plan. Nonetheless, because the San Joaquin County General Plan designates the project site as agricultural and the proposed project would change the site from agricultural use, it would not be considered consistent with the San Joaquin County General Plan designation for the site. The only portion of the project site that is not designated for agriculture in the San Joaquin County General Plan is the area that currently contains industrial uses along Highway 99, which is designated and zoned as industrial by San Joaquin County. This would retain an industrial designation under the proposed project.

As stated earlier in this chapter, the proposed project was reviewed to determine if it would be generally consistent with applicable General Plan policies. Because the policy language found in a City's General Plan is often susceptible to varying interpretations, it is often quite difficult to determine, in a draft EIR, whether a proposed project is consistent or inconsistent with such policies. Case law interpreting the Planning and Zoning Law (Gov. Code, §65000 et seq.) makes it clear (i) that the meaning of such policies is to be determined by the City Council, as opposed to City Staff, EIR consultants, or members of the public, and (ii) that the City Council's interpretations of such policies will prevail if they are "reasonable," even though other reasonable interpretations are also possible. (See *No Oil, Inc. v. City of Los Angeles* (1987) 196 Cal.App.3d 223, 245-246, 249 (*No Oil*).) Courts have also recognized that, because General Plans often contain numerous policies emphasizing differing legislative goals, a development project may be "consistent" with a General Plan, taken as a whole, even though the project appears to be inconsistent or arguably inconsistent with some such policies. (*Sequoyah Hills Homeowners Association v. City of Oakland* (1993) 23 Cal.App.4th 704, 719.) Furthermore, courts strive to "reconcile" or "harmonize" seemingly disparate General Plan policies. (*No Oil*, *supra*, 196 Cal.App.3d at p.244.) Thus, for example, where a General Plan land use map or diagram permits certain land uses, it is unlikely that generic textual policies favoring open space preservation would be seen as trumping the map or diagram designation. In light of these considerations, the discussions in this EIR on the subject of General Plan consistency represent the best attempt of City Staff and the City's EIR consultant to advise the City Council of their opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. Based on the evaluations contained in this EIR, the proposed project is generally consistent with the Manteca General Plan. The public should recognize, however, that the opinions expressed in this Draft EIR are in no way binding on the City Council in the exercise of its discretion.

Zoning

This section discusses the relationship between the proposed ARBPRC and current zoning designations for the site. This analysis considers the adopted County Zoning Ordinance.

As stated earlier in this chapter, the project site is mostly zoned agricultural by the County with a small piece zoned industrial. Although the industrial use would continue under the proposed project,

lands currently zoned agricultural would no longer be agricultural in nature. The project site would be under the jurisdiction of the City of Manteca zoning ordinance. Because the proposed uses on the project site would not remain agricultural in nature, the ARBPRC would be inconsistent with the existing San Joaquin County zoning for these portions of the site.

LAFCO

The proposed project will require the annexation of the entire project site into the City of Manteca. Because an annexation would be required as a part of the project, LAFCO would use this EIR for their review and approval. Generally, LAFCO encourages development to occur contiguous to existing city boundaries while avoiding leapfrog development. In addition, LAFCO encourages development within a city's short-term planning horizon. The provision of all public services and infrastructure must be provided. The ARBPRC site is adjacent to the existing Manteca city limits and annexation of the site would not create a development island. The proposed project is generally consistent with applicable LAFCO policies because the project site is within the City's 10-Year Planning Horizon, the project site would be served by extending City infrastructure for water, sewer, and wastewater services. However, the proposed project would develop active agricultural land and open space before existing vacant or non-prime agricultural land within the city is developed and development of the proposed project would bring the Manteca city limits closer to the Ripon city limits to the south. Although the proposed project would not encroach on Ripon's city limits or cause the Manteca city limits and Ripon City limits to be adjacent, their boundaries would be closer and would reduce the size of the open space area between the two cities. However, San Joaquin County LAFCO will make the ultimate decision on consistency with LAFCO policies.

Compatibility

Existing Adjacent Land Uses

Implementation of the ARBPRC would develop rural, active agricultural land with residential, commercial, a business industrial park, heavy industrial uses, and public quasi-public uses. The ARBPRC is evaluated for compatibility with existing and planned land uses adjacent to the project site. The analysis considers the type and intensity of uses in the project vicinity and evaluates the project against the existing environment and determines if it is compatible with those existing and planned uses surrounding the project site. As stated above, to the extent that potential incompatibilities result in a physical environmental effect, those effects are addressed in the appropriate technical sections of this EIR. Where appropriate, the respective environmental sections are referenced for discussion of any potential physical/environmental impacts that are identified.

Lands to the south, east, and west of the project site are used primarily for active agricultural production. Adjacent land uses could be considered incompatible when physical effects (i.e., odors, dust, light, smoke) associated with the operation of one land use adversely affect an adjacent land use. Agricultural activities generate noise, dust, smoke, and odors that could be considered a nuisance by future residents. Areas adjacent to the project area are actively cultivated. Under the proposed project, as residential development occurs, residential areas would be located adjacent to areas that are and would continue to be actively cultivated. Agricultural activities would generally

only affect properties on the urban edge. Both the City of Manteca and San Joaquin County have adopted a Right-to-Farm Ordinance to reduce the loss of productivity of the County's commercial agricultural resources by limiting the circumstances under which agricultural operations may be deemed to constitute a nuisance. While the Right-to-Farm Ordinances would not prevent potential nuisance activities from occurring, they require notification about potential nuisance activities. With this notification, new home buyers would be made aware of operations on adjacent property and would have the opportunity to evaluate the personal significance of these potential nuisances. For an analysis of project specific impacts related to adjacency issues between agricultural uses and future residences, see Sections 5.3, Air Quality and 5.6, Noise, see Section 5.2 of this EIR.

Planned Adjacent Land Uses

The ARBPRC falls within the identified Manteca General Plan 10-Year Planning Horizon; therefore, the project site is an appropriate location for consideration of potential future urban or suburban growth. Adjacent lands to the east and northeast are planned primarily for residential development and commercial uses, which would be mutually compatible with the proposed project's objectives.

Lands to the west of the project site are slated for residential development. Development of the Diego Country Estates, Lundbom Estates, Evans Estates, Tesoro, Pillsbury Estates, and Winters Colonial Estates projects would add more than 1,000 single-family residential units in the project vicinity. In addition, there is potential for another parcel to develop commercial uses. Spreading out to the west from the ARBPRC, large tracts of land are included in the City of Manteca's 10-Year and 20-Year Planning Horizons. This would likely mean that in the future, land west of the project site would be developed with urban uses.

Land immediately to the south of the project site is not slated for development and is scheduled to remain in active agricultural production for the foreseeable future. Further south of the project site, south of Ripon Road, the City of Ripon designated land as Urban Reserve. However, this land is anticipated to not build out within the City's 35-year planning period and, therefore, would also remain as active agriculture into the foreseeable future. Nonetheless, this area would ultimately be converted to non-agricultural use. To reduce the potential for land use conflict, the cities of Manteca and Ripon have entered into a Memorandum of Understanding (MOU)[7] to work cooperatively with one another with regard to planning and land use issues within their jurisdictions. In the MOU, the cities have agreed to work together to establish a policy statement for each City's General Plan to provide cooperative planning efforts along the common boundaries of the cities. The MOU also includes provisions for the extension and connection of pedestrian and bikeway systems along the Highway 99/UPRR railroad corridor.

Uses within the project site could also conflict with one another. The residential uses on the west side of the project site are adjacent to community commercial and business industrial park uses across Austin Road. Potential conflicts between these uses could arise during truck deliveries to the community commercial areas that could cause increased noise which could disturb nearby sensitive

7 City of Ripon City Council, *Resolution No. 08-43: Memorandum of Understanding By and Between the City of Manteca and the City of Ripon*, July 15, 2008.

receptors. The Manteca zoning ordinance is intended to protect and to promote the public health, safety, peace, comfort, convenience, prosperity and general welfare of City residents. The Zoning Ordinance provides regulations that control the uses of land, density of population, the uses and locations of structures, as well as other standards to ensure that the above goals are met. Zoning districts are based on the General Plan designation for each parcel and provide specific requirements for the parcel. The Zoning Ordinance designates districts in which specific uses are permitted and other uses are specified that are permitted only conditionally. Conditional uses must be reviewed by the Zoning Administrator or the Planning Commission and would be subject to any conditions imposed upon the use in order to be allowed to operate within the zoning district. With conditions imposed, these uses would be considered compatible with other allowed uses in the district.

The Zoning Ordinance also contains standards for siting uses in different districts adjacent to one another. Assuming that uses allowed in each district comply with its regulations, these uses are considered compatible with one another. Because commercial uses are intended to serve the community, they are required to be located near residential uses. Standards to reduce incompatibility with residential zones include, but are not limited to, setbacks, orientation away from residences, fencing or walls and landscaping, restrictions on hours of operation, and maximum allowable noise levels. Conditionally permitted uses require Zoning Administrator or Planning Commission approval, and if additional conditions are required to ensure compatibility with adjacent residential uses, those would be imposed as conditions of approval.

Each of the zoning districts has a distinct purpose. For example, residential districts provide space for housing and community facilities needed to compliment residential areas and for institutions requiring a residential environment. The complementary uses allowed in single-family districts (some with a Conditional Use Permit) include uses such as churches, schools, and day care homes. Multi-family districts are intended for more intensive land uses because of the density of population. Uses allowed in these districts (some with a Conditional Use Permit) include those in single-family districts and such uses as day care centers, hospitals, medical offices, offices, public and quasi-public buildings, and nursing and convalescent homes. Many of the uses allowed in residential districts are similar to residences in that they are occupied 24-hours per day or have people who are sensitive to disturbance, such as children, the sick, or the elderly.

If there is a conflict between provisions in the Manteca Zoning Ordinance and the proposed project, the provisions of the proposed project would govern the development in the project site because the project includes a set of design standards and guidelines that would be adopted as part of the project. These design standards and guidelines would set forth the allowable (permitted) uses and would, in essence, take the place of the Zoning Ordinance. Where the proposed project does not address a specific provision or is silent, the City of Manteca Zoning Ordinance requirements would govern development on the project site. As discussed above, the Master Plan for the proposed project sets forth allowed uses in the project and establishes development standards through Design Guidelines. All development within the ARBPRC would be subject to review by the City to ensure compliance with applicable development standards and design guidelines.

5. ENVIRONMENTAL ANALYSIS

5.0 INTRODUCTION TO THE ANALYSIS

5.0 INTRODUCTION TO THE ANALYSIS

FORMAT OF THE ENVIRONMENTAL ANALYSIS

ENVIRONMENTAL SETTING

According to Section 15125 of the CEQA Guidelines, an EIR must include a description of the existing physical environmental conditions in the vicinity of the project to provide the "baseline condition" against which project-related impacts are compared. Normally, the baseline condition is the physical condition that exists when the Notice of Preparation (NOP) is published. The NOP for the proposed project EIR was published on January 16, 2009. CEQA Guidelines recognize that the date for establishing an environmental baseline cannot be rigid. Because physical environmental conditions may vary over a range of time periods, the use of environmental baselines that differ from the date of the NOP is reasonable and appropriate when doing so results in a more accurate or conservative environmental analysis.

For analytical purposes, impacts associated with implementation of the proposed project are derived from the existing baseline environmental setting — existing conditions at the time the NOP was published. It is appropriate to evaluate project-level impacts against the conditions that exist when the NOP was published for most issue areas. For issue areas either directly or indirectly related to infrastructure, project-level impacts are more conservatively analyzed against future baseline conditions that consider General Plan and approved growth, because improvements (e.g., roadway widenings, intersection improvements, wastewater distribution and conveyance, solid waste disposal, water supply, electricity and natural gas supplies) must consider and accommodate ultimate demand. The assumptions inherent in the Air Quality and Noise analysis are derived from the Transportation and Circulation analysis (prepared by Fehr and Peers Associates); therefore, the baseline year is the same as the other issue areas related to infrastructure.

REGULATORY SETTING

The Regulatory Setting provides a summary of regulations, plans, policies, and laws that are relevant to each issue area.

IMPACTS AND MITIGATION MEASURES

This section is further divided into the following subsections, as described below.

Methods of Analysis

This subsection identifies the methodology used to analyze potential environmental impacts.

Standards of Significance

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance" (CEQA Guidelines Section 15382). Definitions of significance vary with the physical conditions affected and the setting in which the change occurs. The CEQA Guidelines set forth physical impacts that trigger the requirement to make "mandatory findings of significance" (CEQA Guidelines, Section 15091). For all environmental impacts, this EIR identifies specific standards of significance.

Where explicit quantification of significance is identified, such as a violation of an ambient air quality standard, this quantity is used to assess the level of significance of a particular impact in this EIR. For less easily quantifiable impacts, events or occurrences that would be regarded as significant or potentially significant were identified. For example, growth-inducing impacts would be identified as significant if the project results in a level, rate, or character of growth that (among other criteria) exceeds the capacity of existing infrastructure and services. Where the "substantial" effect of an impact is not identified in the CEQA Guidelines, the criteria for evaluating the significance of potential impacts were determined and identified in this document.

Project-Specific and Cumulative Impacts and Mitigation Measures

This subsection describes the potential environmental impacts of the proposed project and, based upon the thresholds of significance, concludes whether the environmental impacts would be considered significant, potentially significant, or less than significant. Each impact is summarized in an "impact statement," followed by a more detailed discussion of the potential impacts and the significance of each impact before mitigation.

Each impact is provided as a "summary block" prior to the impact discussion to allow for easy reference. The impact number consists of the section of the EIR in which that impact is identified followed by a "-" to indicate the number of the impact in that section. For example, Impact 5.1-1 is the first impact identified in Section 5.1.

Following the description of applicable policies and regulations, as well as mitigation measures, the subsection concludes with a statement regarding whether the impact, following implementation of the mitigation measure(s) or the continuation of existing policies and regulations, would remain significant, and thus would be reduced to a less-than-significant level or be significant and unavoidable.

The analysis of environmental impacts considers both the construction and operational phases associated with implementation of the proposed project. As required by Section 15126.2(a) of the CEQA Guidelines, direct, indirect, short-term, long-term, on-site, and/or off-site impacts are addressed, as appropriate, for the environmental issue area being analyzed.

A "significant effect" is defined by Section 15382 of the CEQA Guidelines as "a substantial, or

potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment… [but] may be considered in determining whether the physical change is significant." The EIR uses the following terms to describe the level of significance of impacts identified during the course of the environmental analysis:

a) **Significant and Unavoidable Impact (SU)—**Impact that exceeds the defined threshold(s) of significance and cannot be eliminated or reduced to a less-than-significant level through the implementation of feasible mitigation measures.

b) **Significant Impact (S)—**Impact that exceeds the defined threshold(s) of significance. For purposes of this document, pre-mitigation impacts that exceed the defined threshold(s) of significance are referred to as significant; however, when the impacts cannot be eliminated or reduced to a less-than-significant level through the implementation of feasible mitigation measures, these impacts are referred to as significant and unavoidable.

c) **Less-Than-Significant Impact (LS)—**Impact that does not exceed the defined threshold(s) of significance. This term is used for impacts for which mitigation measure(s) identified can reduce a pre-mitigation impact to a less-than-significant level.

d) **No Impact (NI)—**The project would result in no impact.

Mitigation Measures

This subsection includes feasible mitigation measures that could reduce the severity of the impact. In addition to feasible mitigation measures, it is assumed that the project applicant would comply with all applicable local, State, and federal laws and regulations; however, in some cases these laws and regulations are applied as mitigation measures for the project to allow for monitoring that is consistent with the remainder of the project mitigation measures. It is also assumed that the project applicant would obtain all necessary permits and comply with all required conditions of those permits. In many instances, the actions that are necessary to reduce a project impact are already required by local, State, or federal law. Similarly, there are also established design guidelines or other requirements that the County regularly recognizes and follows for development projects. Nonetheless, these laws or other guidelines may also be applied as mitigation measures, for the reasons discussed above.

5.1 AESTHETICS

5.1 AESTHETICS

INTRODUCTION

This section provides a description of existing visual conditions in the vicinity of the proposed project site and describes the changes to those conditions that would result from implementation of the project. The analysis focuses on the change in visual resources, effects on views, compatibility with the visual characteristics of surrounding uses, and the potential that sensitive receptors could be disturbed by light and glare generated or reflected by new development within the project site.

Information to prepare this section was obtained from a site visit on May 21, 2008, review of the City of Manteca General Plan, the Draft Austin Road Business Park and Residential Community (ARBPRC) Master Plan prepared by the City of Manteca, and material provided in the project application.

No concerns related to aesthetics and visual resources were received in response to the Notice of Preparation (see Appendix B).

ENVIRONMENTAL SETTING

Regional Setting

The ARBPRC project site is located southeast of the City of Manteca in unincorporated San Joaquin County. The northern portion of the project site is immediately adjacent to the southern boundary of the City of Manteca's city limits, south of East Woodward Avenue. The project site is immediately south and west of State Route (SR) 99, while Austin Road bisects the site in a north-south direction. Manteca's urban core is located northwest of the project site within the city limits. Outside of the city limits, land uses are generally restricted to active agricultural uses and rural residential uses, which is reflective of the City's historical roots as an agricultural center. For most of the twentieth century, the City of Manteca has been a predominantly agricultural area due to excellent soil conditions, mild climate, and access to clean water. In the latter part of the twentieth century and continuing to the present, the City's economic base has become more diversified with the development of industries and the influx of Bay Area workers seeking affordable housing.

Site Characteristics

The approximately 1,049-acre project site consists primarily of agricultural fields and rural residential uses associated with those fields. Currently, the site supports active agricultural crops, such as almonds, corn, oats, grapes, and strawberries. The project site also includes an approximately 30-acre parcel located adjacent to SR 99 that includes modern office, warehouse, and industrial uses. The topography of the project site is essentially flat with an elevation of between 40 and 52 feet above sea level. In the spring and summer months, the project site contains areas with crops of

varying heights depending on agricultural activity and almond orchards with full canopies of green leaves. In the fall and winter months, the almond orchards lose their leaves and the trunks become visible. During any time of year and depending on the type of crop, a particular field may be without vegetation, which indicates that the field is either being prepared for a new crop or being laid fallow.

Several rural residences are currently located on the site and consist of older ranch style homes with associated out buildings and agricultural equipment. There are several paved roads on the project site, including Austin Road, Palm Avenue, and Sedan Avenue; however, most circulation on the project site is provided by dirt roads for agricultural activities.

The northeastern boundary of the project site is adjacent to UPRR tracks and SR 99. There are a limited number of trees on the project site apart from those in the almond orchards. There is a row of palm trees lining Palm Avenue that can be seen from a majority of the project site and beyond.

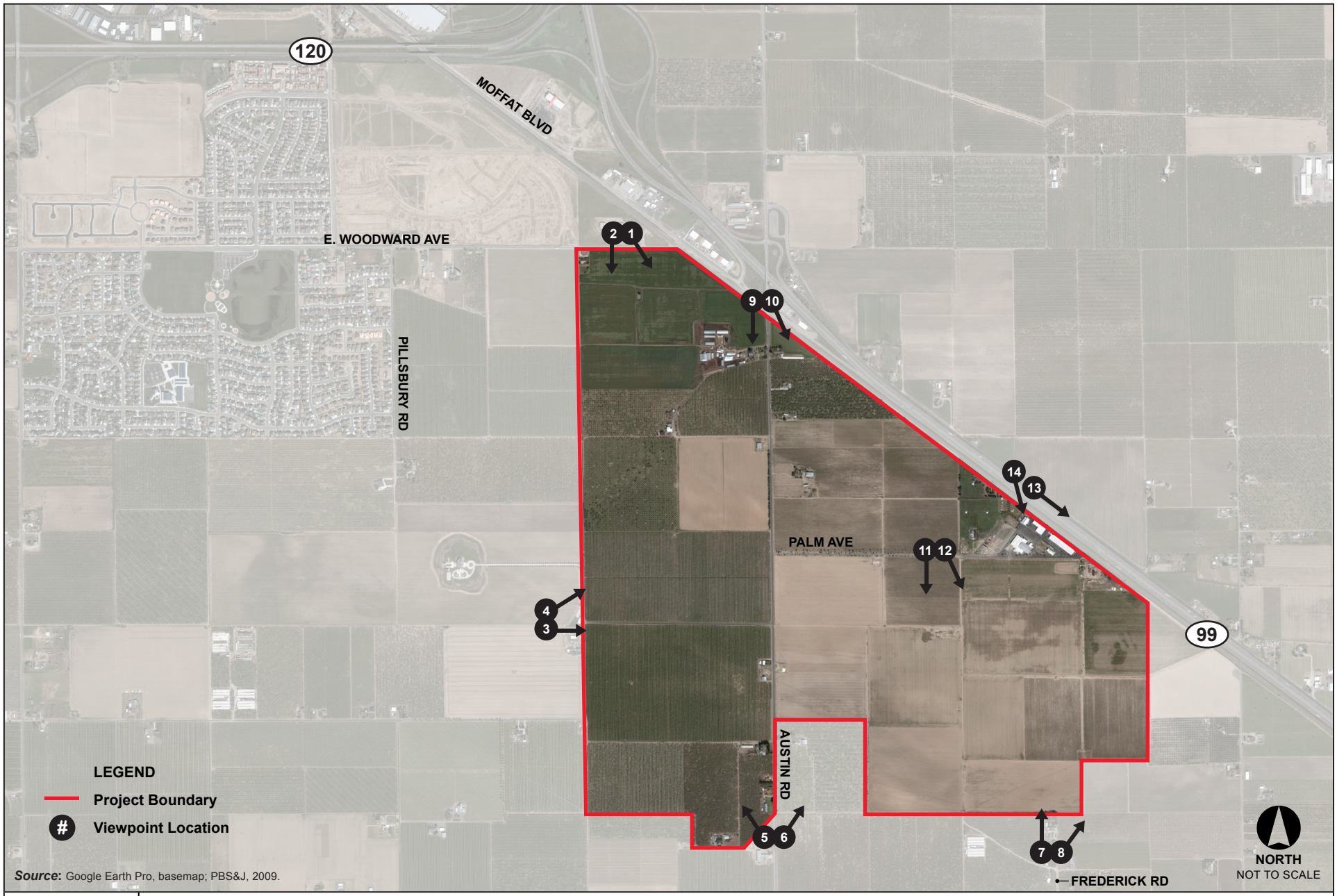
Photographs showing the visual conditions on the project site were taken from eight viewpoints during a site visit on May 21, 2008. Figure 5.1-1 shows an aerial view of the project site with viewpoint locations. Each viewpoint is described in more detail below.

Views of the Project Site

Although the project site is flat, views of the entire site are obstructed by existing orchards and other vegetation. North of the project site from East Woodward Avenue, views to the south of the project site consist of recently planted row crops in the immediate foreground with agricultural buildings and orchards further in the background (see Figure 5.1-2). The row of palm trees along Palm Avenue is also visible to the south (see Figure 5.1-2, Viewpoint 1). As shown in the photograph, there are currently no orchards located in the northern portion of the project site.

From the west, a majority of the adjacent land uses are also in agricultural production. From Sedan Avenue, views of the entire project site are limited due to the mature almond orchards located on the western portion of the project site. There are also scattered rural residences located adjacent to the project site's western boundary; an example of which is shown in Figure 5.1-3, Viewpoint 4. Single-family residences are located further to the west (see Figure 5.1-1) along Pillsbury Road; however, existing orchards located east of Pillsbury Road completely obstruct views of the project site. There is a single-family residential neighborhood located north of East Woodward Avenue whose southeastern corner is adjacent to the project site's northwestern corner (see Figure 5.1-1). This neighborhood is completely surrounded by sound walls, so the only views of the project site from the neighborhood would be from the second story of homes.

Figure 5.1-4 shows the entrance of the project site from the south on Austin Road. As shown on the figure, both sides of the road are lined with rows of almond trees and there is a single rural residential residence visible in the background of Viewpoint 5. Overhead utility lines are also visible along Austin Road, which is a two-lane roadway.



Source: Google Earth Pro, basemap; PBS&J, 2009.

FIGURE **5.1-1**

Viewpoint Locations

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Austin Road Business Park and Residential Community

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Viewpoint 1: Facing Southeast

Viewpoint 2: Facing South

***Source*:** PBS&J, 2009.

FIGURE **5.1-2**

Viewpoints 1 and 2 East Woodward Avenue, North of Project Site

Viewpoint 3: Facing East

Viewpoint 4: Facing Northeast

***Source*:** PBS&J, 2009.

FIGURE **5.1-3**

Viewpoints 3 and 4 Sedan Avenue, West of Project Site

Viewpoint 5: Facing Northwest

Viewpoint 6: Facing Northeast

***Source*:** PBS&J, 2009.

FIGURE **5.1-4**

Viewpoints 5 and 6 South Austin Road, South of Project Site

Southeast of the project site is a cluster of rural residences located on Fredrick Road. Figure 5.1-5, Viewpoint 7 shows the view from this area onto the project site. As shown in Viewpoint 7, the closest rural residential home to the project site is surrounded by mature vegetation and trees which screen clear views of the home, as well as views from the home onto the project site. Viewpoint 8 shows views of the project site to the northeast. There are recently planted trees in the foreground, with fallow fields located further to the north in the background.

Figure 5.1-6 shows internal views of the project site from Austin Road. Almond orchards are visible on both sides of the road and grape vines are visible on the eastern side of Austin Road. Figure 5.1-7 shows internal views of the project site from Palm Avenue. Grape vines are also visible to the south, while recently-disked, dry fields are visible to the southeast. Views to the southeast allow more long-range views because distant views are not obstructed by almond orchards and grape vines.

From the northeast side of SR 99, a majority of the project site is not clearly visible because the topography is approximately the same (see Figure 5.1-8, Viewpoint 13). Thus, only taller features on the project site are clearly visible from this side of the highway, such as almond orchards that are immediately adjacent to SR 99 on the project site. Utility lines along SR 99 are also clearly visible (see Figure 5.1-8, Viewpoint 14). However, for a majority of the rural residences located northeast of SR 99, views across the highway are obstructed by mature oleander (see Figure 5.1-8, Viewpoint 14). The water tower located at the eastern end of Palm Avenue on the project site is also visible from this side of SR 99.

Surrounding Area Characteristics

There are several businesses, including a wholesale industrial truck and parts equipment company and an outdoor furniture company, north of the project site along Moffat Boulevard. Small commercial uses also exist north of the project site along East Woodward Avenue. There is new one- and two-story residential development northwest of the project site, north of East Woodward Avenue. The residential development is immediately north of several parcels of active agricultural land south of East Woodward Avenue, with the project site immediately east of these agricultural parcels. Another recently-constructed residential development is located immediately west of the parcels in agricultural production.

While most residential and commercial development is concentrated in areas north and northwest of the project site, areas to the west, south, east, and northeast of the project site are characterized by active agricultural uses, with rural residences situated in various locations in the vicinity of the project site or immediately adjacent to the project site boundaries.

SR 99 is a north-south state highway that stretches almost the entire length of the Central Valley. At the project site, SR 99 is a four-lane divided highway. According to the California Scenic Highway Mapping System, there are no scenic highways in the vicinity of the project site.

Viewpoint 7: Facing North

Viewpoint 8: Facing Northeast

***Source*:** PBS&J, 2009.

FIGURE **5.1-5**

Viewpoints 7 and 8 South Fredrick Road, South of Project Site

Viewpoint 9: Facing South

Viewpoint 10: Facing Southeast

***Source*:** PBS&J, 2009.

FIGURE **5.1-6**

Viewpoints 9 and 10 South Austin Road, Northern Portion of Project Site

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Viewpoint 11: Facing South

Viewpoint 12: Facing Southeast

***Source*:** PBS&J, 2009.

FIGURE **5.1-7**

Viewpoints 11 and 12 Palm Avenue, Eastern Portion of Project Site

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Austin Road Business Park and Residential Community

11085 | JCS | 09

Viewpoint 13: Facing Southeast

Viewpoint 14: Facing South

***Source*:** PBS&J, 2009.

FIGURE **5.1-8**

Viewpoints 13 and 14 Frontage Road, North of SR 99

The only scenic highway in San Joaquin County is Highway 580, which is located approximately eight miles southwest of the project site.[1]

Light and Glare

Light that falls beyond the intended area of illumination is referred to as light trespass. Types of light trespass include spillover light and glare. Spillover light, which is light that illuminates surfaces beyond the area intended, is typically caused by artificial lighting sources, such as from building security lighting, signage, parking lot lighting, roadway lighting, and stadium lighting on playing fields. Because light dissipates as it moves farther from its source, the intensity of the lighting source is often increased to compensate for this dissipated light, which can further increase the amount of light that illuminates adjacent uses. Spillover light can adversely affect light sensitive uses, such as residential neighborhoods at nighttime. However, nighttime lighting is necessary to provide and maintain safe, secure, and attractive environments. Depending on the proposed use, lighting that uses well-designed energy-efficient fixtures that face downward, cutoff type fixtures or shielded light fixtures, emit the correct intensity of light for the use, and incorporate energy timers would be less obtrusive.

The second type of light trespass is glare, which can result from sunlight reflecting off of building exteriors, such as glass windows or other highly reflective surface materials, or from artificial light sources. Glare results when a light source in the field of vision is brighter than the eye can comfortably accept. Squinting or turning away from a light source is an indication of glare. The presence of a bright light in an otherwise dark setting may be distracting or annoying, referred to as discomfort glare, or it may diminish the ability to see other objects in the darkened environment, referred to as disability glare. Glare is particularly associated with high light intensity emitted at angles near horizontal (75 to 90 degrees from straight down). Glare can be reduced by design features that block direct line of sight to the light source. Glare can also be reduced by directing light downward so that little or no light is emitted at high (near horizontal) angles, since this light would travel long distances. Cutoff-type light fixtures minimize glare because they emit relatively low intensity light at these (near horizontal) angles. Glare resulting from sunlight reflecting off building exteriors can be reduced with design features that use low-reflective glass and exterior materials and colors that absorb, instead of reflect, light.

Existing Light and Glare Conditions

A majority of the project site contains active agricultural fields and several rural residences with associated outbuildings and agricultural equipment. There are no significant light sources located on the project site apart from lights located at the residences and businesses for safety and security. Because a majority of the site consists of agricultural fields, the project site, as well as land uses in the project vicinity, do not create a significant source of light that add to the ambient night glow from the urban core of the City of Manteca. There are also no structures on the site that would create a significant hazard due to glare from reflective materials. The homes on the project site are typically

1 California Department of Transportation, California Scenic Highway Mapping System <http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm> (May 23, 2008).

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. The only structure on the project site that may be a source of glare is the water tower located at the eastern end of Palm Avenue because it is constructed of reflective material.

Adjacent uses, such as the residential neighborhoods northwest of the project site, contain various lighting sources for home security and street lighting for safety at night. The warehouses north of the project site also contain night lighting for security purposes.

REGULATORY SETTING

Federal Regulations

There are no federal regulations regarding aesthetics and visual resources that are applicable to the proposed project.

State Regulations

California State Scenic Highway Program

The California State Scenic Highway Program was created by the Legislature in 1963 and is administered by the California Department of Transportation (Caltrans). Its purpose is to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. Highways are evaluated on how much of the natural landscape a passing motorist sees and the extent to which visual intrusions (e.g., buildings, noise barriers) affect the scenic corridor. The program includes a list of highways that are either designated or eligible for designation as scenic highways. As discussed above, SR 99 is not designated as a scenic highway, and there are no other scenic highways located in the vicinity of the project site.[2]

Local Regulations

City of Manteca General Plan

The following goals and policies from the Manteca General Plan are applicable to the proposed project.

3.1 Compact Community Form

Goal CD-1. Retain the compact and cohesive community form of the City.

Policies

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.

2 California Department of Transportation, California Scenic Highway Mapping System, <http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm> (May 23, 2008).

Implementation Measures

CD-I-2 Approve development projects within new growth areas that support the downtown area as the geographical center of the city.

CD-I-3 Approve and apply neighborhood design standards.

3.2 City Identity

Goal CD-2. Maintain a memorable City identity characterized by distinctive, high quality buildings and streetscapes.

Goal CD-3. Establish distinct, attractive identities for neighborhoods, gateways and commercial areas.

Goal CD-7. Develop attractive and memorable entries to Manteca.

Goal CD-8. Upgrade and enhance the visual quality of Manteca's arterial and collector streets.

Policies

CD-P-10 Establish City gateway features at intersections where gateway features can be established, such as Lathrop Road/SR 99, Austin Road/SR 99, Main Street/SR 120, Union Road/SR 120, McKinley Road/SR 120, Airport Way/SR 120, and Yosemite Avenue/SR 99.

CD-P-11 Establish a landscape program and design standards that will provide an attractive view of Manteca along SR 99 and SR 120. This would include trees, shrubs, wildflowers, and other landscape appropriate to the Manteca climate along the highway right-of-way and within the interchanges.

CD-P-12 Limit uses that require soundwalls adjacent to the highways.

CD-P-13 Allow recreation uses adjacent to the highways, where practical, that are attractive and provide a high level of day and evening activity.

CD-P-14 Establish design guidelines for non-residential uses within 200 feet of SR 99 and SR 120. The guidelines should address the following concepts.

- New office and commercial land use shall provide attractive landscaping, lighting, and signage adjacent to all buildings oriented to SR 99 or SR 120.
- Encourage buildings that include attractive focal elements, such as a tower or articulated roofline in each non-residential development adjacent to SR 99 or SR 120 to serve as visual landmarks.
- New non-residential buildings oriented to SR 99 or SR 120 shall provide an attractive facade similar in articulation, and using the same materials and colors, as the primary facade of the building.
- Truck loading and refuse collection areas adjacent to SR 99 and SR 120 shall be screened from view.
- The landscape along SR 120 and SR 99 will reflect the natural character of the region in the selection of trees and groundcover.

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.

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.

CD-P-17 Opportunities for public art should be incorporated in the public walkways and parking areas.

CD-P-18 The City shall encourage the use of murals and similar public art on buildings.

CD-P-19 The City will identify a program of local improvements such as street tree planting, annual clean-up days, sidewalk installation and repair, and similar local activities to enhance the visual quality of the city.

CD-P-20 The City will establish an inventory of dilapidated properties as candidates for restoration or removal and establish an on-going program of community participation in fix-up and clean-up of dilapidated properties.

CD-P-21 Provide parks and schools as distinct centers for neighborhoods.

CD-P-22 Provide features that distinguish one neighborhood from another, such as natural features, entry gateways, street lighting, or signage.

CD-P-23 Provide pedestrian systems that connect the center of adjacent neighborhoods.

CD-P-24 The City shall ensure through design guidelines that the walls surrounding residential area neighborhoods are attractive and well designed.

CD-P-25 The City shall encourage mixed land uses but provide physical separation or design buffers between incompatible land uses.

CD-P-26 Residential neighborhoods shall be designed to provide access from the neighborhood streets to these open space corridors.

CD-P-27 The City shall encourage designs for new construction and renovation in in-fill neighborhoods that are compatible with the adjacent buildings and the existing residential scale and character of the neighborhood.

CD-P-28 The City shall establish residential design guidelines and standards.

CD-P-29 The City shall establish a street tree program for residential neighborhoods.

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.

3.5 Agricultural Heritage

Goal CD-11 To the extent possible, new development shall retain or incorporate visual reminders of the agricultural heritage of the community.

Policies

CD-P-44 Provide minimal levels of street, parking, building, site and public area lighting to meet safety standards and provide direction.

CD-P-45 Provide directional shielding for all exterior lighting to minimize the annoyance of direct or indirect glare.

CD-P-46 Provide automatic shutoff or motion sensors for lighting features in newly developed areas.

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.

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.

CD-P-49 Allow use of small under-utilized parcels or undeveloped portions of parcels for temporary, seasonal agricultural activity, such as truck farms, strawberries, and small orchards.

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.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

A description of the proposed project site was prepared based on a visit to the project site in May 2008. The proposed site plan and photographs taken during the site visit were used to evaluate the potential effects of project development on the visual character of the project site and the nearby area. The analysis focuses on the manner in which development could change the visual elements or features that exist on the proposed project site.

The visual impacts of the proposed project are analyzed in relation to the change from the existing agricultural character of the site to the developed suburban and industrial character at project buildout. It should be noted that the positive or negative value attached to changes in visual character is largely subjective. Rather than placing a judgment that visual change on the site is positive or negative, the changes on the site are analyzed in relation to existing conditions, which consist of active agricultural lands, rural residences, the surrounding agricultural land and rural residences, and the adjacent residential neighborhoods located northwest of the project site. Sensitive receptors (i.e., those most affected by changes to the visual character of the project site) include residents adjacent to the project site and passing motorists.

The visual effects of construction activities are not evaluated in this section because they would be intermittent and temporary.

Standards of Significance

For the purposes of this EIR, an impact would be considered significant if the proposed project would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Project-Specific Impacts and Mitigation Measures

5.1-1 The proposed project could have a substantial adverse effect on a scenic vista.

Scenic vistas are generally considered to be areas of outstanding natural beauty where much of the scenic quality of the natural landscape remains without intrusion by development. The project site and a majority of adjacent land uses consist of active agricultural uses. These uses would not be considered a scenic vista because agricultural activities and rural residences are relatively common in the surrounding areas of the City of Manteca in unincorporated San Joaquin County. The agricultural character of the site is not unique to the surrounding visual setting. In addition, agricultural activities have altered the natural landscape of the project site: there are no views of the natural landscape in the project vicinity as all surrounding areas are in agricultural production or have been developed.

The project site and the surrounding area are generally flat. Thus, long-range views from adjacent homes are typically blocked by existing almond orchards and other vegetation. Because trees within the orchards are generally tall enough to screen distant views, only residences that are located further away from the trees on the project site that would have access to distant views. However, because there are no areas that would qualify as a scenic vista in the vicinity of the project site, the project would not have an adverse effect on a scenic vista and there would be ***no impact***.

Mitigation Measure

None required.

5.1-2 The proposed project could substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

A scenic resource is visually or aesthetically pleasing, contributes to the definition of a distinct community or region, and is a resource, landmark, or area that has been noted for its outstanding scenic qualities. A scenic resource must have an identifiable landscape character, visual sensitivity

based on the context of the landscape being viewed, perceptual factors of people viewing those landscapes, and scenic integrity. Typically, a scenic resource also contains attributes, characteristics, and features of landscapes that provide varying responses from, and varying degrees of benefits to, humans. A scenic resource visible from a state scenic highway is thus noted for its outstanding scenic quality and is protected because of those qualities. There are no state scenic highways or locally designated highways or roadways within the project site or in the vicinity of the project site. The closest state scenic highway to the project site is Highway 580, which is located approximately eight miles southwest of the project site.[3] Because the project site is not visible from Highway 580, and there are no scenic highways in the project vicinity, there would be ***no impact***.

Mitigation Measure

None required.

5.1-3 The proposed project could substantially degrade the existing visual character or quality of the site and its surroundings.

The proposed project would convert approximately 1,049 acres of agricultural land and rural residential uses to urban land uses, including residential, commercial, and industrial development, and parks and open space uses. The City of Manteca prepared the Draft ARBPRC Master Plan to guide the future development of the project site.[4] The Master Plan includes Design Guidelines that apply to heavy industrial, business/professional, commercial, residential, and public uses within the ARBPRC. The Design Guidelines are to be used by development applicants and their consultants in the formulation of specific development proposals. The Design Guidelines would also be used by City of Manteca staff in the review of development proposals according to the terms and conditions of Section 17.49.040 Site Plan Review/Design Review of the Manteca Municipal Code.

As detailed in the Master Plan, residential neighborhoods within the ARBPRC would accommodate a variety of home types, including single-family and multi-family housing in low- and medium-density neighborhoods. The Design Guidelines specify that the maximum building height for single-family detached and attached residential districts (R-1) is two stories, or 30 feet; the maximum building height for the multi-family medium-density districts (R-3 and R-4) would be three stories, or 35 feet. The Design Guidelines specify that buildings in the commercial (C-G), community commercial (C-C), business industrial park (BIP), and heavy industrial (M-2) districts would have a maximum height of 35 feet. The Master Plan also requires commercial structures over 30 feet in height abutting residential zoning districts to be set back from the property line adjoining the residential zoning district an additional one foot for each two feet of building height over 30 feet. Any commercial or industrial building proposed to exceed 35 feet in height may be approved, provided it is compatible with existing commercial and industrial buildings and parcels and the location, design, and materials would maintain the privacy, light, and air of nearby residential parcels.

3 California Department of Transportation, California Scenic Highway Mapping System, <http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm>, (May 23, 2008).

4 City of Manteca. 2009. *Draft ARBPRC Master Plan.*

According to the Master Plan, landscaping within the ARBPRC would be designed to integrate commercial, industrial, and residential uses. A mixture of trees, shrubs, and ground covers would be required in any landscape design and landscaping that would obstruct sight lines at street or driveway intersections would be prohibited.

The Design Guidelines specify that all signage must be approved under the provisions of the adopted City of Manteca Sign Ordinance. A sign may be illuminated provided that no flashing, traveling, animated, or intermittent illumination is used and illumination must be confined to the area of the sign except when such illumination is backlighting for an otherwise non-illuminated sign.

Commercial, industrial, and residential development within the ARBPRC would be required to achieve a consistent level of architectural design. The Design Guidelines specify that the architectural style of buildings should have a contemporary appearance and utilize elements that complement the existing character of Manteca. The Design Guidelines require buildings to relate to the relatively small scale of adjacent structures and incorporate such elements as variation in textures and materials in the design of elements facing the public streets. Metal-framed industrial buildings would be allowed only to the extent that the industrial nature of the use mandates this type of construction. Such buildings would be subject to design review to determine if metal buildings are appropriate, in which case surface treatment to the office portions of such structures facing the public street would be required. All sides of office buildings would be required to be attractively designed, using high quality materials. Any accessory buildings and enclosures, whether attached to or detached from the main building, shall be of similar compatible design and material.

The Design Guidelines specify that large buildings would be required to have facades that include variations in form and texture. Continuous surface treatments of a single material should be minimized. Where an industrial area abuts a residential neighborhood, abrupt scale changes would be discouraged in accordance with the Design Guidelines. The transition from residential to industrial would be required to be gradual, with smaller, less intensive uses near the residential properties and the largest and most intensive uses farthest from the residential.

Consistent with the Master Plan, the park and open space system in the proposed project would include a range of park uses for passive and active recreation uses. Parks would be located near centers of neighborhoods to facilitate access, to greet residents and visitors, and to foster neighborhood gathering. Parks would also distribute recreational opportunities through the project site. The City would review future development proposals on the project to ensure the project links residential, employment, and commercial areas through an integrated street network, bike trails, and pedestrian walks. Community and neighborhood parks are also required to include dual-use storm water detention areas to accommodate portions of the project's storm drainage needs. The Design Guidelines require that dual-use park and storm water detention facilities are to be fully landscaped and designed with gentle slope and varied contours to blend in with the adjacent park design.

While the Design Guidelines would ensure that the project site is developed in a consistent manner and in accordance with City policies and ordinances pertaining to visual character, the project would nonetheless substantially change the existing agricultural and rural residential character of the site.

This change would be particularly obvious to the agricultural and rural residential uses that would remain in their current uses immediately adjacent to the project site. The rural, agricultural character of the project site would be eliminated and replaced with residential, commercial, and industrial buildings as high as 35 feet (or higher with conditional City approval). Because the proposed project would substantially alter the existing character of the project site, this would be considered a ***significant impact***.

Mitigation Measure

There are no mitigation measures available that would help reduce the loss of the existing visual character of the project site. Therefore, this impact would remain ***significant and unavoidable.***

None available.

5.1-4 The proposed project could create a new source of substantial light or glare, which could adversely affect day or nighttime views in the area.

The approximately 1,049-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. A majority of ambient nighttime light emanates from the residential neighborhoods northwest of the project site and, on a larger scale, the entire City of Manteca. There are no structures on-site that are constructed of reflective materials, so under existing conditions there are no significant hazards due to glare from reflective materials. The structures on the project site, including homes and industrial/warehouse buildings, are typically constructed with non-reflective materials, which do not create a source of glare. Roof materials are typically wood or clay tiles, which would not create a significant reflective surface.

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, homes, and commercial and industrial buildings 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.

As discussed in the Design Guidelines, lighting would be placed where it can best aid in illuminating activity areas but not overly light the site: lighting fixtures would be scaled in size to match the size of the area to be lit. The Design Guidelines specify that lighting or highlighting of building facades is permitted but should be sensitive, subtle, and not excessive. As specified in the Design Guidelines, area lighting would be required to be directed downward and placed to prevent glare or excessive spillover light on neighboring sites. The Design Guidelines specify accent illumination would at key locations, such as building entries and driveway entries And illumination of pedestrian walkways, plazas, or other activity. Parking and roadways should use either mercury vapor or high pressure sodium lamps.

Although parking lot lighting and street lighting, the source most likely to interfere with nighttime views due to the brightness of the lights and the height of the light poles, could result in increased

sky glow, the project would be appropriately designed to reduce sky glow and light spill through lighting restrictions discussed above. Reflective surfaces would be minimized to the extent possible to reduce glare introduced to the area as a result of the project. Because the proposed project would be required to follow the Design Guidelines, lighting and glare impacts would be reduced through project design, resulting in a ***less-than-significant impact.***

Mitigation Measure

None required.

Cumulative Impacts

The cumulative context for the evaluation of cumulative impacts on aesthetics addresses the effects of the proposed project in combination with other development in the City of Manteca adjacent to the site and development shown in the City of Ripon General Plan.[5] The City of Manteca includes land use designations for Low-Density Residential to the west of the project site; the area to the north east is designated Urban Reserve, Urban Reserve-Agriculture, and Urban Reserve-Business Industrial Park. The City of Ripon designates the area south of the project site Urban Reserve, which could ultimately be developed with residential, commercial, or industrial, when services are available; land use designations east of the project site are designated in the City of Ripon's General Plan for Light Industrial, Heavy Industrial, and Highway Service uses along SR 99. The cumulative context for light and glare would be other development that could affect the same sites that would be affected by light or glare generated by the project.

Currently, the project site and a majority of adjacent land uses consist of active agricultural uses. These uses would not be considered a scenic vista because agricultural activities and rural residences are relatively common in the surrounding areas of the City of Manteca in unincorporated San Joaquin County. The agricultural character of the site is not unique to the surrounding visual setting. In addition, urban development, as well as agricultural activities, has altered the natural landscape of the project site. Development of the project site in combination with other development in the project vicinity would not have a substantial adverse effect on a scenic vista because there are no areas that would qualify as a scenic vista in the vicinity of the project site. The cumulative impact would be considered *less than significant*.

As discussed in Impact 5.1-2, there are no state scenic highways or locally designated highways or roadways within the project site or in the vicinity of the project site. The closest state scenic highway to the project site is Highway 580, which is located approximately eight miles southwest of the project site. Because development of the proposed project, as well as other development in the cities of Manteca and Ripon, would not be visible from Highway 580, and there are no scenic highways in the vicinity of the project the cumulative impact is considered *less than significant.*

The landscape of the project site would change from agricultural land to suburban and urban development with prominent buildings rising from the landscape. The area between Manteca and

5 City of Ripon, *City of Ripon General Plan 2040*, September 2006, Exhibit 2.1.

Ripon would change from an area with an agricultural character to an area with prominent buildings for suburban and urban uses. This could create a visual contrast to viewers adjacent to the project site, as well as viewers on nearby roads and properties. Therefore, the cumulative visual impacts of probable future projects are significant. The proposed project would contribute to this change. Because the project proposes land uses that could develop larger scale structures, the project's incremental contribution to these visual impacts would be cumulatively considerable and thus significant.

Currently, there are no significant light sources located on the project site. Sources of night lighting emanate from the existing neighborhood northwest of the project site. In addition, reasonably foreseeable, probable future development in Manteca and Ripon would also include nighttime lighting, increasing light and glare and limiting views of the nighttime sky. This would be considered a significant cumulative impact. The project would include exterior lighting for parking, security, and signage. Project lighting, in addition to lighting from other cumulative development, could create a new source of light that would affect nighttime views in the area. Because the project site currently contains few light sources, the new light sources on the project site, combined with existing and future light sources would be substantial. Thus, the proposed project would contribute to the cumulative increase in ambient light that would exist in combination with other development, and the project's contribution to new light sources and glare that could create hazards would be considerable.

The proposed project would contribute to urbanization of a predominantly agricultural area and contribute to existing ambient nighttime lighting. The project's contribution to both these impacts would be considerable. While there are no mitigation measures available that would help reduce the loss of the existing visual character of the project site beyond the design standards required in the proposed project's Design Guidelines, new light sources associated with proposed project development would be designed to reduce impacts of glare and spill light on adjacent non-compatible uses. However, because light sources associated with cumulative development cannot be fully mitigated, the impact would be a significant cumulative impact.

5.2 AGRICULTURAL RESOURCES

5.2 AGRICULTURAL RESOURCES

INTRODUCTION

This section of the EIR examines the effects of the Austin Road Business Park and Residential Community (ARBPRC) project on agricultural resources and operations on the project site, on areas designated for off-site infrastructure, and on adjacent lands. This section analyzes the conversion of farmland to non-agricultural uses; potential conflicts with existing zoning for agricultural uses or land under Williamson Act contract; and potential conflicts with City goals, policies, and standards related to agriculture that may lead to substantial physical effects on the environment.

This section is based on information included in the City of Manteca 2023 General Plan, the City of Manteca Municipal Code, the California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP), and the Natural Resources Conservation Service Soil Survey.

No comments related to agricultural resources were raised in response to the Notice of Preparation (see Appendix B).

ENVIRONMENTAL SETTING

ARBPRC Project Site

Manteca is located in an area of rich agricultural resources, including orchards, dairies, vineyards, row crops, and pasture land. A wide variety of agricultural production takes place in Manteca. The majority of the approximately 1,049-acre project site is under active agricultural use. Crop types include corn, oats, almonds, and grapes on the northern half of the project site and almonds, grapes, and strawberries on the southern half of the project site. The majority of the project site is classified as Important Farmland by the California DOC, and the project site includes approximately 183 acres under Williamson Act contracts under nonrenewal status. Farmland categories and Williamson act contracts are discussed in detail below. The project site also includes an approximately 30-acre parcel located adjacent to SR 99 that includes modern office, warehouse, and industrial uses.

Current Land Use Designations and Zoning

San Joaquin County Land Use Designations and Zoning

Approximately 995 acres of the project site are designated as General Agriculture (A/G), approximately 39 acres are designated as Limited Industrial (I/L), and the remainder designated transportation corridors in the San Joaquin County General Plan. The A/G designation applies to areas suitable for agriculture outside areas planned for urban development where the soils are capable of producing a wide variety of crops and/or supporting grazing; parcel sizes are generally large enough to support commercial agricultural activities; and there exists a commitment to commercial agriculture in the form of Williamson Act contracts and/or capital investments. Typical

uses in the A/G designation include crop production, feed and grain storage and sales, and animal raising and sales. The residential density is a maximum of one primary residence per 20 acres. The I/L designation provides for a range of industrial activities, including production, assembly, warehousing and distribution. Typical uses are light impact manufacturing, warehousing, wholesaling, corporation yards, and distribution.

The project site is currently zoned General Agriculture (AG-40) and Warehouse Industrial (I-W) in the San Joaquin County Zoning Code (the zoning corresponds to the General Plan designations). The AG-40 designation requires a minimum parcel size of 40 acres. The AG-40 zone is established to preserve agricultural lands for the continuation of commercial agriculture enterprises. Minimum parcel size within the AG-40 Zone is 40 acres, as specified by the precise zoning. The I-W zone is intended to accommodate warehouses and service establishments catering to those uses whose primary distinguishing feature is independence from public sewage disposal systems through the use of septic tanks, without the production of industrial wastes. New lots in this zone are a minimum of 40,000 square feet.

City of Manteca Land Use Designations

The project site is located outside the City limits of Manteca, but is within the City's Sphere of Influence. The site is designated as Low Density Residential (LDR), Medium Density Residential (MDR), High Density Residential (HDR), General Commercial (GC), Heavy Industrial (HI), and Park (P) in the Manteca General Plan (see Figure 2-3). Manteca General Plan land use designations for the project site are defined in Chapter 4.0, Land Use, of this Draft EIR.

Williamson Act Contracts

Intended to assist the long-term preservation of prime agricultural land in the State, Williamson Act contracts provide the agricultural landowner with a substantial property tax break for keeping land in agricultural use. A detailed description of the Williamson Act is provided in the Regulatory Setting below.

The project site includes approximately 183 acres under Williamson Act contract. All of the Williamson Act contracts are under non-renewal status. The project proposes that the areas currently under Williamson Act contract remain in agricultural use until the contracts expire, after which those areas could be developed with residential uses. The parcels under Williamson Act contract and adjacent Williamson Act parcels in the project vicinity are shown on Figure 2-4 in Chapter 2, Project Description.

California Department of Conservation Farmland Categories

The California DOC FMMP does not regulate property use, but it provides consistent and impartial data to decision makers with regulatory authority for use in assessing the present status, reviewing trends, and planning for the future of California's agricultural land resources. The FMMP produces updated Important Farmland maps, which are hybrids of resource quality (soils) and land use information. Although these maps are intended to be updated every 2 years, the FMMP has not

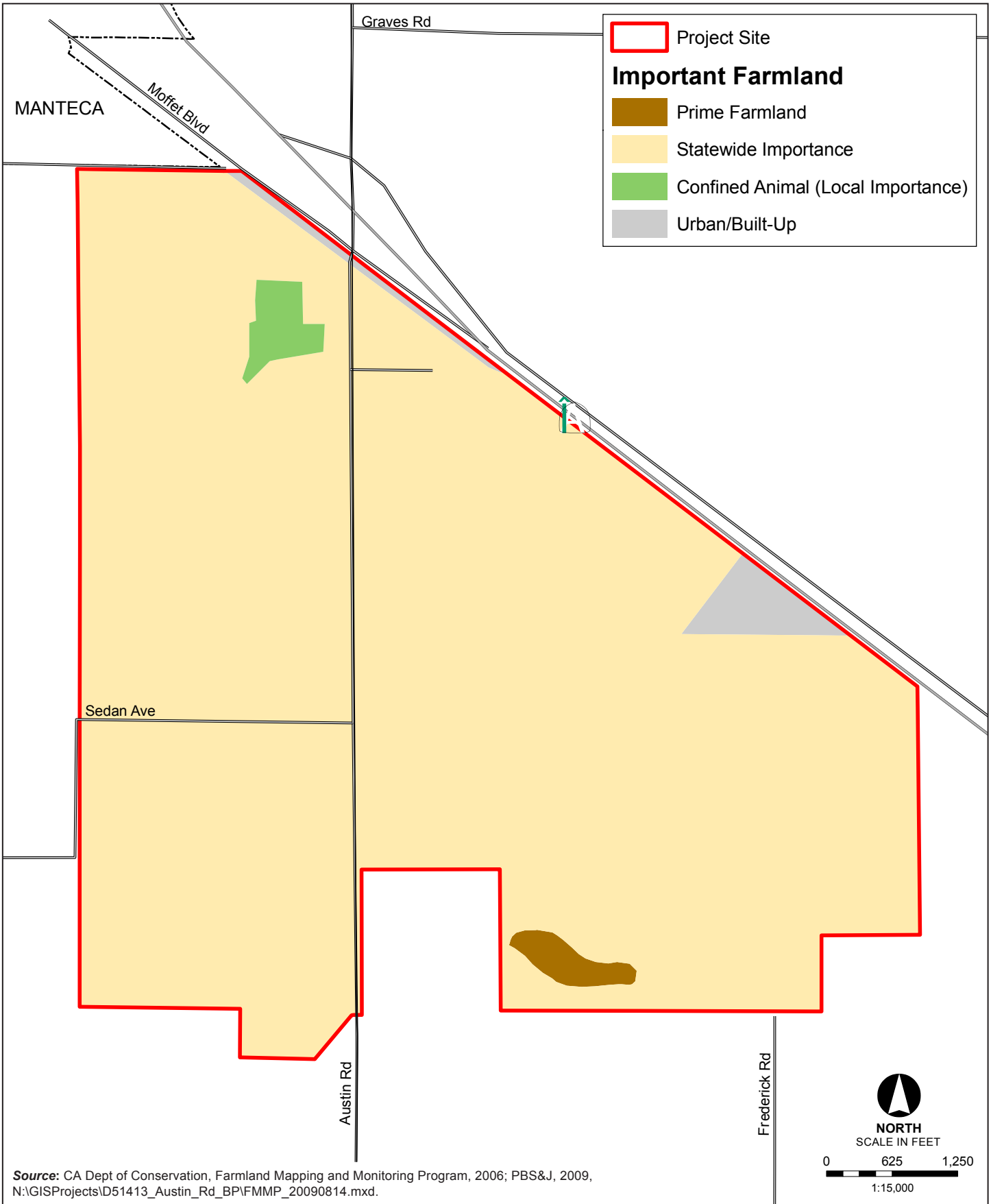
been updating at that frequency. The maps identify Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Farmland of Local Importance, urbanized land, and other lands. The biennial *California Farmland Conversion Report* tracks the rate of farmland loss throughout California.

The majority of the project site is classified as Important Farmland by the DOC, with approximately 1,013 acres of Farmland of Statewide Importance, approximately 10 acres of Confined Animal Agriculture (which qualifies as Farmland of Local Importance in San Joaquin County), and approximately 8 acres of Prime Farmland.[1] Approximately 20 acres of the project site are classified as Urban/Built-Up (see Figure 5.2-1).

The following definitions of farmland categories are derived from the FMMP and are used in FMMP mapping, trend reports, and other analyses.

- **Prime Farmland**—farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to mapping.
- **Farmland of Statewide Importance**—farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to mapping.
- **Unique Farmland**—farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but it may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to mapping.
- **Farmland of Local Importance**—land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. For San Joaquin County, this definition is all farmable land within San Joaquin County not meeting the definitions of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. This includes land that is or has been used for irrigated pasture, dryland farming, confined livestock or dairy facilities, aquaculture, poultry facilities, and dry grazing. It also includes soils previously designated by soil characteristics as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland that since have become idle.
- **Other Land**—land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines; borrow pits; and water bodies smaller than 40 acres.

1 California Department of Conservation, *Farmland Mapping and Monitoring Program*, 2006. Project boundaries input into the Farmland Mapping and Monitoring Program do not precisely match defined project boundaries, thus total acres do not add to 1,049.



***Source*:** CA Dept of Conservation, Farmland Mapping and Monitoring Program, 2006; PBS&J, 2009, N:\GISProjects\D51413_Austin_Rd_BP\FMMP_20090814.mxd.

FIGURE **5.2-1**

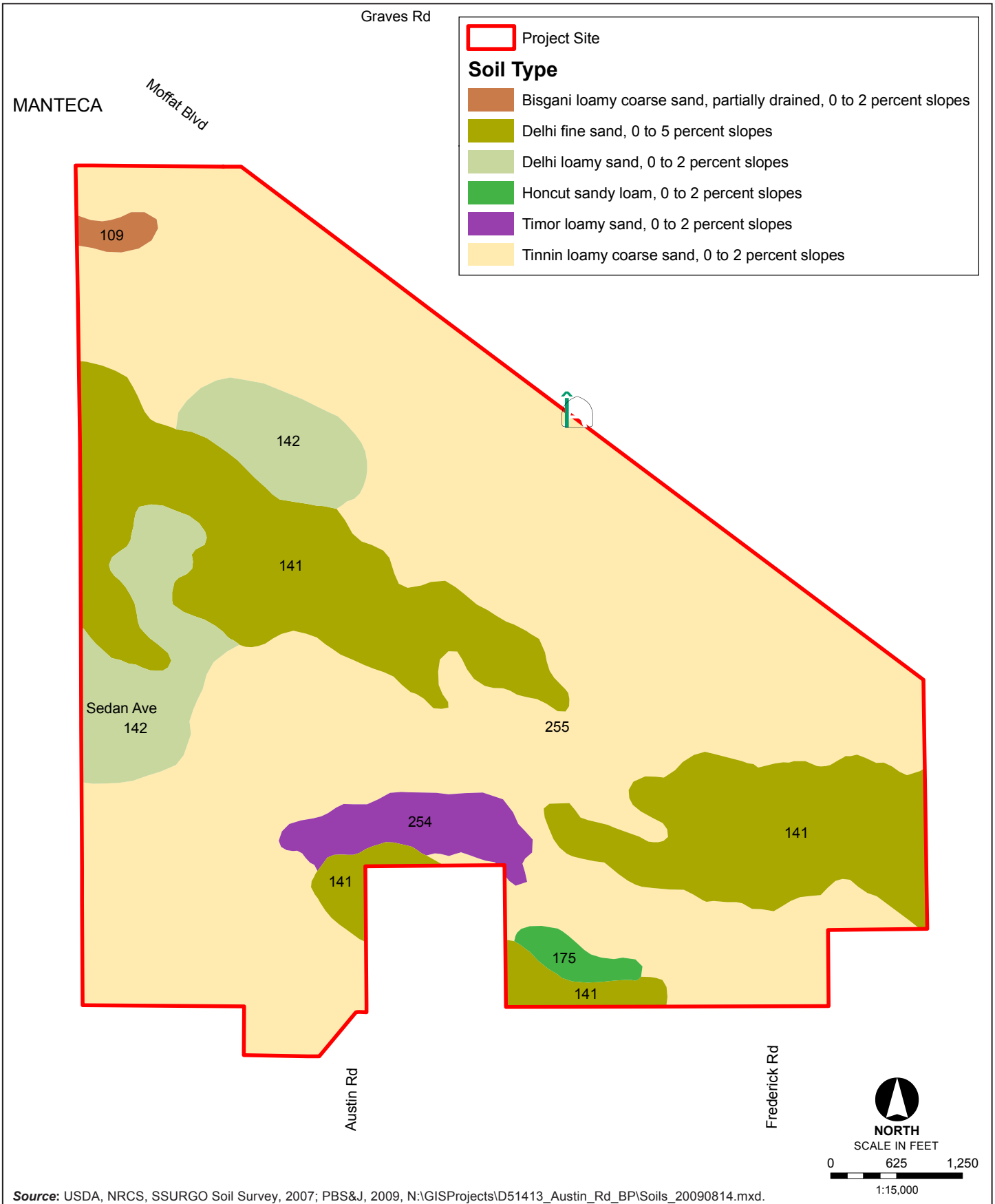
Important Farmlands on the Project Site

Soils

There are several methods for classifying soil quality for agricultural uses. One method involves a soil capability rating provided by the Natural Resources Conservation Service (NRCS). This classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

- Class 1 soils have slight limitations that restrict their use.
- Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.
- Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.
- Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.
- Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.
- Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.
- Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.
- Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or aesthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, e, w, s, or c, to the class numeral, for example, 2e. The letter e shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; w shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); s shows that the soil is limited mainly because it is shallow, droughty, or stony; and c, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry. In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by w, s, or c because the soils in class 5 are subject to little or no erosion. Soils on the project site are shown on Figure 5.2-2 and in Table 5.2-1.



***Source*:** USDA, NRCS, SSURGO Soil Survey, 2007; PBS&J, 2009, N:\GISProjects\D51413_Austin_Rd_BP\Soils_20090814.mxd.

FIGURE **5.2-2**

Soil Types on the Project Site

TABLE 5.2-1

SOIL TYPES ON THE PROJECT SITE

Type	Soil Capability Rating[1]	Percentage of Project Site[2]
Bisgani loamy coarse sand, partially drained, 0 to 2 percent slopes	3W	0.49%
Delhi fine sand, 0 to 5 percent slopes	3S	22.78%
Delhi loamy sand, 0 to 2 percent slopes	3S	7.50%
Honcut sandy loam, 0 to 2 percent slopes	2S	0.73%
Timor loamy sand, 0 to 2 percent slopes	3S	2.55%
Tinnin loamy coarse sand, 0 to 2 percent slopes	3S	65.95%

Notes:
1. Under irrigated conditions.
2. Percentages are based on Web Soil Survey GIS data.
Source: USDA Natural Resources Conservation Service Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/> (November 16, 2009).

Surrounding Land Uses

Uses to the north of the project site include agricultural support buildings along East Woodward Road, and a single-family residential subdivision to the northwest. Active agricultural uses and one single family residence are west of the project site. Further to the west, beyond the agricultural fields, is a single family residential subdivision. Active agricultural uses, a nursery, and scattered residences are located south of the project site. Active agricultural uses and scattered residences, as well as UPRR tracks and SR 99, are located to the east of the project site.

REGULATORY SETTING

Federal Regulations

There are no federal regulations applicable to agricultural resources.

State Regulations

Williamson Act

The California Land Conservation Act of 1965 (or Williamson Act) (California Government Code Section 51200) recognizes the importance of agricultural land as an economic resource that is vital to the general welfare of society. The enacting legislation declares that the preservation of a maximum amount of the limited supply of agricultural land is necessary to the conservation of the State's economic resources, and is necessary not only to the maintenance of the agricultural economy of the State, but also for the assurance of adequate, healthful, and nutritious food for future residents of the State and the nation.

Intended to assist the long-term preservation of prime agricultural land in the State, Williamson Act contracts provide the agricultural landowner with a substantial property tax break for keeping land in agricultural use. When under contract, the landowner no longer pays property tax for an assessed valuation based upon the property's urban development potential. The Williamson Act stipulates that for properties under contract, "the highest and best use of such land during the life of the

contract is for agricultural uses." Therefore, property under contract is assessed and taxed based upon its agricultural value. Williamson Act contracts remain in effect for 10 years unless the property owner files for a notice of non-renewal with the County.

The Williamson Act also addresses "compatible" uses. In Section 51231, the Williamson Act states that, "…the board or council, by resolution, shall adopt rules governing the administration of agricultural preserves…Rules related to compatible uses shall be consistent with the provisions of Section 51238.1." Section 51238.1 states the following:

> (a) Uses approved on contracted lands shall be consistent with all of the following principles of compatibility:
>
> (1) The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.
>
> (2) The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.
>
> (3) The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

Potential project conflicts with parcels under Williamson Act contract are addressed in the impact analysis below.

Local Regulations

City of Manteca General Plan

The following goals and policies from the Resource Conservation (RC) Element of the Manteca 2023 General Plan are applicable to the proposed project.

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.

Policies

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-26 The City shall restrict the fragmentation of agricultural land parcels into small rural residential parcels except in areas designated for estate type development in the General Plan Land Use Diagram.

RC-P-27 The City shall discourage the cancellation of Williamson Act contracts outside the Primary Urban Service Boundary line.

RC-P-28 The City shall not extend water and sewer lines to premature urban development that would adversely affect 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

It is the City's policy to preserve, protect, and encourage the use of viable agricultural lands 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. Chapter 8.24 of the City's Municipal Code is intended to reduce the occurrence of conflicts between nonagricultural and agricultural land uses within the city. Disclosure statements are required to be provided to and signed by purchasers of property located in the city. In addition, prior to issuance of a city building permit for construction of a residential building the owner of the property upon which the building is to be constructed shall sign, date and file with the city building department a disclosure statement acknowledging the proximity of agricultural operations and the potential for inconvenience or nuisance associated with those uses.

8.24.030 Delivery of disclosure statement by transferor.

The transferor of any property located in the city shall deliver the disclosure statement required by this chapter to the prospective transferee as follows:

A. In the case of a sale, as soon as practicable before transfer of title.

B. In the case of transfer by a real property sales contract, as defined in Section 2985 of the Civil Code, as soon as practicable before execution of the contract. For the purpose of this subsection "execution" means the making or acceptance of an offer. With respect to any transfer subject to subsection A or B, the transferor shall indicate compliance with this chapter either on the receipt for deposit, the real property sales contract, or any addendum attached thereto or on a separate document.

8.24.050 Disclosure statement—Building permits.

Prior to issuance of a city building permit for construction of a residential building the owner of the property upon which the building is to be constructed shall sign, date and file with the city building department the disclosure statement… (set forth in the Municipal Code)

City of Manteca Agricultural Mitigation Fee Program

Chapter 13.42 of the Manteca Municipal Code defines the City's Agricultural Mitigation Fee Program, which authorizes the collection of development impact fees to offset costs associated with the loss of productive agricultural lands converted for urban uses within the city. Fees are used to protect agricultural lands planned for agricultural use and by working with farmers who voluntarily wish to place conservation easements on their land with fair compensation for such easements.[2]

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

Potential impacts were assessed based upon information from the California DOC FMMP, Geographic Information Systems (GIS) data for the project area, and field review of the project site and surrounding areas.

Standards of Significance

For the purposes of this EIR, an impact would be considered significant if the proposed project would:

- Convert Important Farmland (Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance) as defined in the California DOC FMMP to non-agricultural use;
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Important Farmland to non-agricultural use; or
- Conflict with existing zoning for agricultural use or with a Williamson Act contract.

Project-Specific Impacts and Mitigation Measures

5.2-1 The proposed project could convert Important Farmland (Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance) as defined in the California Department of Conservation Farmland Mapping and Monitoring Program to non-agricultural use.

According to the most recent information from the FMMP, the approximately 1,049-acre project site contains 1,013 acres of Farmland of Statewide Importance, approximately 10 acres of Confined Animal Agriculture (which qualifies as Farmland of Local Importance in San Joaquin County), and

2 City of Manteca. 2009. *City of Manteca Municipal Code VI. Development Fee.* <http://qcode.us/codes/manteca>, (November 4, 2009).

approximately 8 acres of Prime Farmland. Approximately 20 acres of the project site are classified as Urban/Built-Up (see Figure 5.2-1).

Development of the proposed project would result in the conversion of approximately 1,031 acres of Important Farmlands as defined by the CDC to non-agricultural uses. The project would also require the construction of off-site water, wastewater, and stormwater improvements (e.g., conveyance pipelines) to serve the project. While some off-site infrastructure could be constructed on Important Farmland, construction impacts would be temporary, and none of the proposed off-site improvements would result in the permanent conversion of agricultural land to non-agricultural use.

The EIR for the General Plan found that conversion of Prime Farmland to urban uses, including the project site, would be significant. Consequently, the conversion of the project site to non-agricultural use would be considered a ***significant impact***. As discussed above, the City's Agricultural Mitigation Fee Program, established by Chapter 13.42 of the Manteca Municipal Code, authorizes the collection of development impact fees to offset costs associated with the loss of productive agricultural lands converted for urban uses within the city. Fees are used to protect agricultural lands planned for agricultural use and by working with farmers who voluntarily wish to place conservation easements on their land with fair compensation for such easements. While payment of fees would be used to protect other agricultural land from conversion, the project site itself would still be converted to non-agricultural use, which would result in a net reduction of agricultural land. No other feasible mitigation is available to mitigate the direct conversion of Important Farmland to non-agricultural uses. Therefore, the conversion of Important Farmland associated with the proposed project would be considered ***significant and unavoidable***.

Mitigation Measure

None available.

5.2-2 The proposed project could conflict with existing zoning for agricultural use or with a Williamson Act contract.

The proposed project would convert farmland to develop heavy industrial, commercial, office, mixed use, residential uses, and public/quasi-public uses. The project site is located within the ten-year planning horizon of the adopted City of Manteca Sphere of Influence and is designated for industrial, commercial, residential, and park uses in the Manteca General Plan. Therefore, the project site's ultimate conversion to other uses is anticipated in the adopted Manteca General Plan.

The majority of the project site is currently designated for agriculture by San Joaquin County. The conversion of the site to non-agricultural use would, therefore, conflict with existing County General Plan designations and zoning for agricultural use and this would be considered a ***significant impact***. However, the loss of this land for agriculture is already considered in Impact 5.2-1, and no further impact due to the conversion of agricultural land would result from the conflict with existing County General Plan designations and zoning.

The project site includes approximately 183 acres under Williamson Act contract. All of the Williamson Act contracts are under non-renewal status and the project proposes that the areas currently under Williamson Act contract remain in agricultural use until the contracts expire, after which those areas could be developed with residential uses. The parcels under Williamson Act contract identified above and adjacent Williamson Act parcels in the project vicinity are shown on Figure 2-4 (see Chapter 2, Project Description).

Because the proposed project does not include buffers within the site, there would be the potential for incompatibilities between future users of the project site and adjacent agricultural operations. As discussed above, Chapter 8.24 of the City's Municipal Code requires disclosure statements to be provided to and signed by purchasers of property located adjacent to agricultural land in the city. In addition, prior to issuance of a city building permit for construction of a residential building, the owner of the property upon which the building is to be constructed must sign, date, and file with the city building department a disclosure statement acknowledging the proximity of agricultural operations and the potential for inconvenience or nuisance associated with those uses. Nonetheless, because the proposed project would include residential uses adjacent to agricultural uses, certain agricultural practices, such as aerial spraying of pesticides, could be limited or eliminated, which could result in a potential loss of productivity on adjacent lands enrolled under a Williamson Act contract. Therefore, this would be considered a ***significant and unavoidable impact***.

Mitigation Measure

None available.

Cumulative Impacts

The cumulative context for the loss of farmland would be development in San Joaquin County. Development of the project site would result in the conversion to non-agricultural uses of approximately 1,031 acres of Important Farmlands as defined by the CDC. San Joaquin County comprises approximately 921,600 acres. The acreage of remaining Important Farmland in San Joaquin County is expected to substantially decrease from approximately 630,000 in the year 2000 to 520,000 in the year 2040 and 270,000 in the year 2080 as a result of urbanization.[3] Population growth in both the City of Manteca and San Joaquin County as a whole is expected to continue in the future and place continued pressure on agricultural lands for conversion. With or without implementation of the project, the trend of land conversion from agricultural uses to urban and other non-agricultural uses (including wildlife habitat enhancement) in the Central Valley would continue. This would be a significant cumulative impact.

The permanent conversion of 1,031 acres of Important Farmland on the project site to non-agricultural use is considered cumulatively considerable when considered in connection with the significant cumulative losses that will occur as a result of the project, past farmland conversions, and

3 City of Manteca. 2006. *Draft Focused Environmental Impact Report, Oleander, Sundance, and Sundance 2 Development Projects*. June. Prepared by EDAW, p. 5-6.

planned future development in the City, the surrounding cities, and San Joaquin County as a whole. Further, because of the extension of infrastructure to previously underdeveloped areas and the expansion of the urban core of the City, the project could increase pressures for urbanization of areas south of the project site and could result in the permanent conversion to urban land uses of additional areas previously devoted to agriculture. The project applicant would pay the agricultural mitigation fee to the City to help offset the conversion of Important Farmland, which the City would use to purchase conversation easements on agricultural lands and/or farmland deed restrictions, providing greater protection to these farmlands in the County. However, conservation of off-site agricultural land would not fully mitigate the project's cumulatively considerable contribution to the loss of agricultural land in San Joaquin County; therefore, cumulative impacts would be significant and the project's incremental contribution would also be significant.

5.3 AIR QUALITY

5.3 AIR QUALITY

INTRODUCTION

This section addresses potential impacts on air quality associated with implementation of the proposed Austin Road Business Park and Residential Community (ARBPRC) site, including a discussion of changes in air quality associated with construction and operation of the project. Impacts related to substantial odors were found to be less than significant during preparation of the IS/NOP and are not further discussed in this section.

One comment letter related to air quality was received in response to the Notice of Preparation (NOP; see Appendix B). The letter, submitted by San Joaquin Valley Air Pollution Control District (SJVAPCD) stated the proposed project would increase ambient air pollution problems in San Joaquin County and described the manner in which impacts should be assessed. In addition, SJVAPCD asked that the EIR analyze the potential impacts of the project related to greenhouse gases. It should be noted that this analysis is included in Chapter 5.10 (Greenhouse Gases).

Information used to prepare this section was taken from various sources, including the *San Joaquin Valley Air Pollution Control District (SJVAPCD) Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI)*, the *SJVAPCD 2004 Extreme Ozone Attainment Demonstration Plan (1-Hour Ozone Plan)*, the *SJVAPCD 8-Hour Ozone Reasonably Available Control Technology—State Implementation Plan (RACT SIP) Analysis (8-Hour Ozone Plan)*, the *SJVAPCD 2006 PM10 Plan*, data from the URBEMIS 2007 air quality modeling software, and information from the California Air Resources Board (ARB).

ENVIRONMENTAL SETTING

Existing Conditions

A region's air quality is influenced by climate, topography, and pollutant sources. As shown below, the characteristics of the region encompassing the City of Manteca are such that the area can, at times, have the potential for high concentrations of regional and localized air pollutants.

Climate and Topography

The California ARB has divided California into fourteen regional air basins according to topographic drainage features. The entire City of Manteca and the project site are located within the San Joaquin Valley Air Basin (Basin), which encompasses eight counties and is spread across 25,000 square miles of Central California. The Basin is approximately 250 miles long and averages 35 miles in width. The Basin is defined by three mountain ranges: the Sierra Nevada to the east (8,000 to 14,000 feet in elevation), the Coast Ranges to the west (averaging 3,000 feet in elevation), and the

Tehachapi Mountains to the south (6,000 to 8,000 feet in elevation). The basin opens to the sea at the Carquinez Strait where the San Joaquin–Sacramento Delta empties into San Francisco Bay.

The Basin has an "inland Mediterranean" climate, averaging over 260 sunny days per year. The valley floor is characterized by warm, dry summers and cooler winters. The average summer temperature is above 71 degrees Fahrenheit (°F), with days often over 100°F. Temperatures in winter are typically in the 50s during the day, with lows in the evenings in the 30s. Persistent fog and low cloudiness can occur. Approximately 85 percent of the annual rainfall occurs between October and May, and measures approximately 12 inches.

Although marine air generally flows into the Basin from the San Joaquin-Sacramento River Delta, the region's topographic features restrict air movement through and out of the Basin. The mountain ranges hinder air movement and result in a weak air flow, which becomes blocked vertically by high barometric pressure over the Basin. As a result, high pollutant concentrations can occur over time within the Basin.

Air Quality Background

Air pollutant emissions within the Basin are generated by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources are usually subject to a permit to operate from the SJVAPCD, occur at specific identified locations, and are usually associated with manufacturing and industry. Examples of point sources are boilers or combustion equipment that produce electricity or generate heat, such as heating, ventilation, and air conditioning (HVAC) units. In contrast, area sources are widely distributed, produce many small emissions and do not require permits to operate from the SJAVPCD. Examples of area sources include residential and commercial water heaters, painting operations, portable generators, lawn mowers, agricultural fields, landfills, and consumer products, such as barbeque lighter fluid and hairspray, the area-wide use of which contributes to regional air pollution. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on road or off road. On-road sources are those that are legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and construction vehicles. Mobile sources account for the majority of the air pollutant emissions within the Basin. However, air pollutants can also be generated by the natural environment, such as when fine dust particles are pulled off the ground surface and suspended in the air during high winds.

Both the federal and State governments have established ambient air quality standards for outdoor concentrations of specific pollutants, referred to as "criteria pollutants," in order to protect public health. The federal and State ambient air quality standards have been set at concentration levels to protect the most sensitive persons from illness or discomfort with a margin of safety. It is the responsibility of the SJVAPCD to bring air quality within the Basin into attainment with the federal and State ambient air quality standards, which are identified later in this section.

The criteria pollutants for which federal and State standards have been promulgated and that are most relevant to air quality planning and regulation in the Basin are ozone, carbon monoxide, fine

suspended particulate matter, nitrogen dioxide, sulfur dioxide, and lead. In addition, toxic air contaminants (TACs) are of concern in the Basin. Each of these pollutants is briefly described below.

Ozone (O_3) is a highly reactive and unstable gas that is formed when reactive organic gases (ROGs) and nitrogen oxides (NO_X), both byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.

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

Respirable Particulate Matter (PM_{10}) and *Fine Particulate Matter ($PM_{2.5}$)* consist of extremely small, suspended particles or droplets 10 microns and 2.5 microns or smaller in diameter, respectively. Some sources of particulate matter, like pollen and windstorms, are naturally occurring. However, in populated areas, most particulate matter is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, construction activities, and agricultural activities.

Nitrogen dioxide (NO_2) is a nitrogen oxide compound that is produced by the combustion of fossil fuels, such as in internal combustion engines (both gasoline and diesel powered), as well as point sources, especially power plants. Of the seven types of nitrogen oxide compounds, NO_2 is the most abundant in the atmosphere. As ambient concentrations of NO_2 are related to traffic density, commuters in heavy traffic can be exposed to higher concentrations of NO_2 than those indicated by regional monitors.

Sulfur dioxide (SO_2) is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO_2 oxidizes in the atmosphere, it forms sulfates (SO_4). Collectively, these pollutants are referred to as sulfur oxides (SO_X).

Lead (Pb) occurs in the atmosphere as particulate matter. The combustion of leaded gasoline is the primary source of airborne lead in the Basin. The use of leaded gasoline is no longer permitted for on-road motor vehicles, so the majority of such combustion emissions are associated with off-road vehicles such as race cars. However, because it was emitted in large amounts from vehicles when leaded gasoline was used for on-road motor vehicles, lead is present in many soils and can get re-suspended in the air. Other sources of lead include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, and the use of secondary lead smelters.

Toxic Air Contaminants (TACs) refer to a diverse group of air pollutants that are capable of causing chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health. They include both organic and inorganic chemical substances that can be emitted from a

variety of common sources including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. TACs are different from "criteria" pollutants in that ambient air quality standards have not been established for them, largely because there are hundreds of air toxics and their effects on health tend to be felt on a local scale rather than on a regional basis.

State standards have been promulgated for other criteria air pollutants, including SO_4, hydrogen sulfide, lead, and visibility-reducing particles. California also recognizes vinyl chloride as a TAC with an undetermined threshold level of exposure for adverse health effects. Vinyl chloride and hydrogen sulfide emissions are generally emitted from mining, milling, refining, smelting, landfills, sewer plants, cement manufacturing, or the manufacturing or decomposition of organic matter. California standards for sulfate and visibility-reducing particles are not exceeded anywhere in the Basin. Lead is typically only emitted during demolition of structures expected to include lead-based paint and materials, but may occur during demolition of structures within the project area during implementation of the proposed project.

Health Effects of Air Pollutants

Ozone

Individuals exercising outdoors, children and adults with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible sub-groups for ozone effects. Short-term exposures (lasting for a few hours) to ozone at levels typically observed in areas with generally higher concentrations of ozone, such as Southern California, can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. Elevated ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in high-ozone communities.[1]

Ozone exposure under exercising conditions is known to increase the severity of the above-mentioned observed responses. Animal studies suggest that exposure to a combination of pollutants that include ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.[2]

1 California Office of Environmental Health Hazard Assessment. 2003. *Air Pollution and Children's Health*. November.

2 U.S. Environmental Protection Agency. *Health Effects of Ozone in the General Population*. <www.epa.gov/03healthtraining/population.html> (June 16, 2009).

Carbon Monoxide

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of worsening oxygen supply to the heart.

Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport and competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include patients with diseases involving heart and blood vessels, fetuses, and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes.

Reduction in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO, resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include pre-term births and heart abnormalities.[3]

Particulate Matter

A consistent correlation between elevated ambient fine particulate matter (PM_{10} and $PM_{2.5}$) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer.[4]

Daily fluctuations in $PM_{2.5}$ concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children, and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate matter.

The elderly, children, and people with pre-existing respiratory or cardiovascular disease appear to be more susceptible to the effects of high levels of PM_{10} and $PM_{2.5}$.

Nitrogen Dioxide

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO_2 at levels found in homes with gas stoves.[5] Increase in resistance to air flow and airway contraction is

3 Ritz, Beate. *Air Pollution and Human Reproduction: What do we know?* May 2007.
4 California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.
5 California Air Resources Board. *Residential Cooking Exposure Study Finds Unhealthful Levels.* <www.arb.ca.gov/research/indoor/bcooking.pdf> (June 16, 2009).

observed after short-term exposure to NO_2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.[6]

In animals, exposure to levels of NO_2 considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO_2.

Sulfur Dioxide

A few minutes exposure to low levels of SO_2 can result in airway constriction in some asthmatics, all of whom are sensitive to its effects. In asthmatics, increase in resistance to air flow and reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2.[7]

Animal studies suggest that despite SO_2 being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing of cells lining the respiratory tract.

Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Lead

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Lead poisoning can cause anemia, lethargy, seizures, and death, although it appears that there are no direct effects of lead on the respiratory system. Lead can be stored in the bone from early age environmental exposure, and elevated blood lead levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and

6 California Air Resources Board. *Health Effects Research.* <www.arb.ca.gov/research/health/healthres.htm> (June 16, 2009).

7 *Ibid.*

osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of previous environmental lead exposure of their mothers.[8]

Toxic Air Contaminant Emissions

In addition to the criteria air pollutants discussed above, another group of airborne substances, TACs, are known to be highly hazardous to health, even in small quantities. TACs are airborne substances capable of causing short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects (i.e., injury or illness).

TACs can be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. Farms, construction sites, and residential areas can also contribute to toxic air emissions. Due to mounting scientific evidence of adverse health effects, the ARB has recently identified diesel particulate matter (DPM) as a TAC.[9] Regulation of TACs is achieved through federal and State controls on individual sources. The 1990 Clean Air Act (CAA) Amendments offer a comprehensive plan for achieving significant reduction in both mobile and stationary source emissions of certain designated Hazardous Air Pollutants (HAP), with a goal of achieving the EPA one-in-one-million cancer risk from TACs. All major stationary sources of designated HAPs are required to obtain and pay the required fees for an operating permit under Title V of the Federal Clean Air Act (FCAA) Amendments.

Existing Regional Air Quality

Measurements of ambient concentrations of the criteria pollutants are used by the United States Environmental Protection Agency (U.S. EPA) and the ARB to assess and classify the air quality of each air basin, county, or, in some cases, a specific developed area. The classification is determined by comparing actual monitoring data with federal and State standards. If a pollutant concentration in an area is lower than the standard, the area is classified as being in "attainment." If the pollutant exceeds the standard, the area is classified as a "nonattainment" area. If there is not enough data available to determine whether the standard is exceeded, the area is designated "unclassified."

The entire Basin is designated as a state-level severe nonattainment area for 1-hour ozone, and as a federal-level serious nonattainment area for 8-hour ozone. The area is also a federal-level serious nonattainment area for PM_{10}, as designated by the U.S. EPA, while it is state-level nonattainment for PM_{10}. The Basin is a federal-level nonattainment area for $PM_{2.5}$. It is in attainment for the federal and State ambient air quality CO, SO_2, Pb, and NO_2 standard. NO_2 is a pure form of NO_x.[10]

The ARB collects ambient air quality data through a network of air monitoring stations throughout the State. These data are summarized annually and are published in the ARB's California Air Quality

8 California Office of Environmental Health Hazard Assessment. *Air Pollution and Children's Health*. November 2003.

9 California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.

10 San Joaquin Valley Air Pollution Control District, 1998. *Guide for Assessing and Mitigation Air Quality Impacts,* August (revised January 10, 2002).

Data Summaries. The closest monitoring station to the proposed project site is the Stockton-Hazelton Street monitoring station, which is located approximately eight miles to the north of the site. This station currently monitors emission levels of ozone, PM_{10}, $PM_{2.5}$, CO, and NO_2.

Table 5.3-1 (Summary of Ambient Air Quality in the Proposed Project Vicinity) identifies the most recent available data for federal and State ambient air quality standards for the relevant air pollutants, along with the ambient pollutant concentrations that were measured at the Stockton air quality monitoring station between 2005 and 2007.

TABLE 5.3-1

SUMMARY OF AMBIENT AIR QUALITY IN THE PROPOSED PROJECT VICINITY

Air Pollutants Monitored at Stockton-Hazelton Street Monitoring Station	Year		
	2006	**2007**	**2008**
Ozone (O_3)			
Maximum 1-hour concentration measured	0.109 ppm[1]	0.093 ppm	0.105
Number of days exceeding federal 0.12 ppm 1-hour standard	0	0	0
Number of days exceeding State 0.09 ppm 1-hour standard	6	0	2
Maximum 8-hour concentration measured	0.092 ppm	0.082 ppm	0.091 ppm
Number of days exceeding federal 0.08 ppm 8-hour standard	3	0	4[2]
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration measured	0.072 ppm	0.70 ppm	0.76 ppm
Number of days exceeding State 0.25 ppm 1-hour standard	0	0	0
Number of days exceeding federal 100 ppb 1-hour standard	0	0	0
Annual average	0.018 ppm	0.016 ppm	0.017 ppm--
Does measured annual average exceed federal 0.0534 ppm annual average standard?	No	No	No
Carbon Monoxide (CO)			
Maximum 8-hour concentration measured	2.25 ppm	2.31 ppm	1.86 ppm
Number of days exceeding federal 9.0 ppm 8-hour standard	0	0	0
Number of days exceeding State 9.0 ppm 8-hour standard	0	0	0
Respirable Particulate Matter (PM_{10})			
Maximum 24-hour concentration measured (National statistics)	82.0 µg/m^3	71.0 µg/m^3	104.5 µg/m^3
Number of days exceeding federal 150 µg/m^2 24-hour standard	0	0	0
Maximum 24-hour concentration measured (State statistics)	85.0 µg/m^3	75.0 µg/m^3	105 µg/m^3
Number of days exceeding State 50 µg/m 24-hour standard	62.9	23.5	48.7
Fine Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration measured	47.0 µg/m^3	52.0 µg/m^3	81.2 µg/m^3
Number of days exceeding federal 65.0 µg/m 24-hour standard	20.8	34.1	27.7

Notes:
1. ppm = parts by volume per million of air.
2. Reflects exceedance of revised 2008 federal standard.
3. µg/m^3 = micrograms per cubic meter.

Source: CARB. Air Quality Data Statistics. <www.arb.ca.gov/adam/welcome.html>. (November 9, 2009).

According to the air quality data from the Stockton-Hazelton Street monitoring station, shown in Table 5.3-1, the federal 1-hour ozone standard was not exceeded over the last 3 years, while the State 1-hour ozone standard was exceeded a total of 8 days during the same period. The federal 8-hour ozone standard was exceeded a total of 7 days over the last 3 years. There is no 8-hour standard for the state. ARB estimates that the State 24-hour PM_{10} standard was exceeded a total of 135 days over the past three years. The federal standard for $PM_{2.5}$ was exceeded a total of 82 days

over the past 3 years. There is no State standard for $PM_{2.5}$. No federal or State standards for CO or NO_2 have been exceeded over the last 3 years.

REGULATORY SETTING

Air quality within the Basin is addressed through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality within the Basin are discussed below.

Federal

United States Environmental Protection Agency

The U.S. EPA is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants through the FCAA. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP.

State

California Air Resources Board

The California ARB, a branch of the California EPA, oversees air quality planning and control throughout California. It is primarily responsible for ensuring the implementation of the California Clean Air Act (CCAA) and responding to the FCAA requirements. In this capacity, the ARB conducts research, sets State ambient air quality standards, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The ARB establishes emissions standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

California Clean Air Act

The CCAA provides the air districts, such as SJVAPCD, with the authority to manage transportation activities at indirect sources. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. Examples of this would be the motor vehicles at an intersection, a mall, and on highways. SJVAPCD also regulates stationary sources of pollution throughout its jurisdictional area. Direct emissions from motor vehicles are regulated by the ARB.

California Ambient Air Quality Standards

The State of California began to set California ambient air quality standards (CAAQS) in 1969 under the mandate of the Mulford-Carrell Act. The CAAQS are generally more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, there are CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

Originally, there were no attainment deadlines for CAAQS. However, the CCAA of 1988 provided a time frame and a planning structure to promote their attainment. The CCAA required nonattainment areas in the State to prepare attainment plans and proposed to classify each such area on the basis of the submitted plan, as follows: moderate, if CAAQS attainment could not occur before December 31, 1994; serious, if CAAQS attainment could not occur before December 31, 1997; and severe, if CAAQS attainment could not be conclusively demonstrated at all. The attainment plans require a minimum 5 percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented. As discussed above, the San Joaquin area of the SJVAB is currently classified as a nonattainment area for three criteria pollutants: O_3, PM_{10}, and $PM_{2.5}$.

Local

San Joaquin Valley Air Pollution Control District

The SJVAPCD is the agency principally responsible for comprehensive air pollution control in the Basin. To that end, the SJVAPCD, a regional agency, works directly with the San Joaquin Council of Governments (SJCOG), county transportation commissions and local governments, and cooperates actively with all federal and State government agencies. The SJVAPCD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emissions sources, and enforces such measures through educational programs or fines, when necessary.

The SJVAPCD has adopted several attainment plans to achieve State and federal air quality standards to comply with CCAA and FCAA Amendments requirements. The SJVAPCD must continuously monitor its progress in implementing attainment plans and must periodically report to the ARB and the EPA. It must also periodically revise its attainment plans to reflect new conditions and requirements in accordance with schedules mandated by the CCAA and FCAA. To meet FCAA and CCAA requirements, the SJVAPCD has submitted numerous plans for attaining ozone, PM_{10}, and CO standards. Also, the SJVAPCD recently adopted a plan designed to address $PM_{2.5}$ emissions from mobile and stationary sources.

In 1992, SJVAPCD initiated its first incentive program known as the Reduce Motor Vehicle Emissions Program (REMOVE). In 2005, SJVAPCD adopted REMOVE II, which reduces emissions from light- and medium-duty motor vehicles within SJVAPCD jurisdiction by allocating funds to cost-effective projects that have the greatest motor vehicle emission reductions, thereby creating long-term air quality benefits for the San Joaquin Valley.

Applicable Rules

SJVAPCD has several existing rules and regulations that govern the manner in which various activities can emit air pollutants. Several of these rules may apply to development allowed under the proposed project, while other potential land uses, such as dry cleaning establishments, may be required to comply with additional SJVAPCD rules and regulations.

Rule 4101 Visible Emissions

This rule prohibits the emissions of visible air contaminants to the atmosphere. The rule prohibits the discharge into the atmosphere from any single source of emission, any air contaminant, other than uncombined water vapor, that is as dark or darker in shade as that designated as No. 1 on the Regulations Chart for a period or periods aggregating more than three (3) minutes in any one hour.

Rule 4103 Open Burning

Through a permit process, this rule regulates open burning, including agricultural burning, to minimize the smoke impact on the public. The District utilized a daily allocation system to limit the amount, timing, and locations of open burning. The District considers several factors including air quality, meteorological conditions expected during the burning, locations of smoke-sensitive areas relative to the materials to be burned, and types and amounts of materials to be burned.

Rule 4106 Boilers, Steam Generators, and Process Heaters, Phase 3

This rule requires all boilers and steam generators with a heat input rating greater than 5 million British thermal units per hour (MMBtu/hr) to achieve certain exhaust limits for NO_x and CO. This rule was established in 2003 as part of the strategy for achieving ozone attainment.

Rule 4601 Architectural Coatings

The purpose of this rule is to limit volatile organic compounds (VOC) emissions from architectural coatings by regulating the storage, cleanup, and labeling requirements. Painting Practices: The rule requires that all containers for architectural coatings (including any volatile material used for thinning or cleanup) be closed when not in use. The rule also sets limits on the amount of VOCs in architectural coating and prohibits thinning such that the limits would be exceeded.

Rule 4641 Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations

This rule limits VOC emissions by restricting the application and manufacturing of cutback asphalt,[11] slow cure asphalt, or emulsified asphalt.

11 Cutback asphalt is manufactured by blending cement with a petroleum solvent.

Rule 4702 Internal Combustion Engines, Phase 2

This rule requires stationary engines to meet certain exhaust limits for NO_x and CO, but these limits are not applicable to standby engines as long as they are used fewer than 200 hours per year (e.g., for testing during non-emergencies).

Rule 4901 Wood Burning Fireplaces and Wood Burning Heaters

This rule limits emissions of CO and particulate matter from wood burning fireplaces and heaters by regulations of the sale, supply, and installation of wood burning devices. Wood burning heaters must be U.S. EPA Phase II certified and sellers must provide public information about proper operation and maintenance of the heater and the health effects of wood smoke. The rule also prohibits the installation of wood burning fireplaces in new residential developments with a density greater than two dwelling units per acre or more than one wood burning heater per dwelling unit in any new residential development with a density equal to or greater than two dwelling units per acre.

Rule 4902 Natural Gas-fired, Fan-type Residential Central Furnaces

This rule requires natural gas-fired, fan-type residential central furnaces sold or installed within the District to be certified as meeting specified exhaust limits for NO_x.

Regulation VIII (Fugitive PM_{10} Prohibitions)

This series of rules (8011, 8021, 8031, 8041, 8051, 8061, 8071, and 8081) are aimed at reducing fugitive PM_{10} emissions. Sources regulated under these rules include construction, excavation, earthmoving activities, carryout and trackout, open areas, paved and unpaved roads, unpaved vehicle/equipment traffic areas, and agricultural resources.

Rule 9510 Indirect Source Review (ISR)

The purpose of this rule is to fulfill the District's emission reduction commitments in the PM_{10} and Ozone Attainment Plans by reducing emission from the construction and operational uses of projects through design features and on-site measures. The rule also provides a mechanism for reducing emissions through off-site measures. These reductions are achieved through implementation of the Indirect Source Review Program. This rule applies to any applicant that seeks to gain a final discretionary approval for qualified projects.[12] Development projects that have a mitigated baseline below two tons per year of NO_x and two tons per year of PM_{10} are exempt.

In the ISR process, the applicant must submit an Air Impact Assessment (AIA) application to the District at the same time as applying for a final discretionary approval from the relevant public agency. The project applicant must commit to reducing NO_x and PM_{10} emissions from construction activities and operational use of the project. For construction equipment greater than 50 horsepower, the NO_x emissions must be reduced by 20 percent and the PM_{10} emissions 45 percent

12 "Qualified Projects" include 50 residential units; 2,000 square feet (sf) of commercial space; 25,000 sf of light industrial space; 100,000 sf of heavy industrial space; 20,000 sf of medical office space; 39,000 sf of general office space; 9,000 sf of educational space; 10,000 sf of government space; 20,000 sf of recreational space; or 9,000 sf of space not otherwise identified.

below the statewide average. The District believes that construction emissions reductions can be achieved by using add-on controls, cleaner fuels, or newer equipment. Operational emissions must be reduced 33 percent for NO_x and 50 percent for PM_{10} below the project's operational baseline at the time of buildout over a period of ten years. These emission reductions may be met through any combination of on-site emission reduction measures such as bike trails, or increases in energy efficiency, or through fees that fund emission reduction programs off-site. Implementation of the project in accordance with the District's rules and regulations will provide consistency with the District's planning documents for achieving ambient air quality standards.

City of Manteca General Plan

The City of Manteca General Plan (General Plan) includes several policies specifically related to air quality. The following policies of the General Plan would apply to the project:

Policies

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.

AQ-P-4 Develop and maintain street systems that provide efficient traffic flow and thereby minimize air pollution from automobile emissions.

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.

AQ-P-7 New construction will be managed to minimize fugitive dust and construction vehicle emissions.

AQ-P-10 Encourage energy efficient building designs.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to construction and operation of the proposed project. Air pollutant emissions associated with the proposed project would result from operation of the proposed development and from project-related traffic volumes. Construction activities would also generate emissions at the project site and on roadways resulting from construction-related traffic and equipment. Impacts associated with construction emissions are qualitatively analyzed (see below). The net increase in project site emissions generated by operation of the proposed project and other secondary sources has been quantitatively estimated and compared to thresholds of significance recommended by the SJVAPCD. In determining the level of significance, the analysis assumes that the proposed project would comply with all applicable laws, regulations, and ordinances (summarized above).

Construction Emissions

A project's construction phase produces many types of emissions, but PM_{10} is the pollutant of greatest concern. The SJVAPCD recognizes that construction equipment also emits carbon

monoxide and ozone precursor emissions, but except in the case of large construction project, SJVAPCD targets the reduction of PM_{10} as the determining factor for construction air emissions. Rather than provide a quantitative significance threshold for PM_{10}, the SJVAPCD has determined that a project's PM_{10} impacts will be less than significant if the project complies with certain mitigation measures. Accordingly, the SJVAPCD has determined that compliance with Regulation VIII for all sites and implementation of all other feasible control measures (as appropriate, depending on the size and location of the project site) will constitute sufficient mitigation to reduce PM_{10} impacts to a level considered less than significant. However, as mentioned above, in the case of large projects, such as the proposed project, the potential for a project to exceed the annual emission thresholds of SJVAPCD should be and has been evaluated quantitatively.

Operational Emissions

Operational emissions associated with the proposed project are estimated using the URBEMIS 2007 computer model developed for the ARB, information provided in Chapter 2 (Project Description), and trip generation rates from the project traffic study (section 5.9 of this Draft EIR). Operational emissions would be comprised of mobile source emissions and area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the project site associated with operation of the proposed project. Area source emissions are generated by landscape maintenance equipment, consumer products, and natural gas consumption for space and water heating. To determine if an air quality impact would occur, the increase in emissions was compared with the SJVAPCD's recommended thresholds.

Localized CO Concentrations for Operation

Localized CO concentrations are evaluated using Caltrans's CALINE4 and traffic volumes provided in the project traffic study (see section 5.9). This methodology assumes worst-case conditions and provides an estimate of maximum, worst-case CO concentrations. The resulting emissions are compared with adopted national and State ambient air quality standards. For this analysis, CO concentrations from a total of fourteen (14) roadway intersections were modeled based on intersection operations and the impact of the proposed project on those intersections, consistent with the UC Davis "Transportation Project-Level Carbon Monoxide Protocol" as directed by the SJVAPCD GAMAQI. Any intersections identified as operating at unacceptable (LOS E or F) conditions were modeled to determine if localized CO concentrations could exceed adopted national and/or state ambient air quality standards.

Standards of Significance

As the agency principally responsible for comprehensive air pollution control in the Basin, the SJVAPCD recommends that projects should be evaluated in terms of the air pollution control thresholds listed above, which were established by the SJVAPCD and published in the GAMAQI. These thresholds were developed by the SJVAPCD to provide quantifiable levels so that projects can be compared using the same standard. The City uses the SJVAPCD's thresholds that are recommended at the time that development projects are proposed to assess the significance of

quantifiable impacts. The following thresholds were used to determine if air quality impacts are significant:

- Expose sensitive receptors to substantial pollutant concentrations;
- Produce more than 10 tons/year of ROG;
- Produce more than 10 tons/year of NO_x;
- Produce more than 15 tons/year of PM_{10}
- Exceed NAAQS or CAAQS for CO (9 ppm 8-hour average; 20 ppm 1-hour average); or
- Not comply with the SJVAPCD's Regulation VIII regarding particulate matter emissions from construction activities. Compliance with SJVAPCD Regulation VIII and the local zoning code would reduce particulate emission impacts to levels that are considered less than significant by the SJVAPCD.

Additionally, the standards of significance, adapted from Appendix G of the CEQA Guidelines, that are appropriate for use in this analysis include:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation; or
- Result in a cumulatively considerable net increase of any criteria pollutant for which the proposed project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors, including ROGs and NO_X).

Project-Specific Impacts and Mitigation Measures

5.3-1 Construction activities could generate substantial concentrations of criteria air pollutants, including fugitive dust.

Construction of the proposed project would take place over several years and in several phases. The URBEMIS 2007 model (Version 9.2.4) was used to estimate construction source emissions from on-site fuel combustion by the construction equipment and off-site fuel combustion by the worker and construction supply vendor vehicles, based on the land use type and size of each of the proposed project's components and the expected duration of construction activity. The proposed project's construction emissions were estimated for several milestone years between the beginning of project construction in 2010 and the 2025 buildout horizon and compared with the applicable SJVAPCD significance thresholds, as shown in Table 5.3-2 (see Appendix C for air modeling assumptions and outputs).

As discussed previously, the SJVAPCD bases the determination of significance of construction impacts on a consideration of the control measures to be implemented except in the case of large construction projects. A project's construction phase produces many types of emissions, but particulate matter (PM_{10} and $PM_{2.5}$) is the pollutant of greatest concern. As stated in the GAMAQI,

particulate matter emitted during construction can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors, making quantification difficult. Despite this variability in emissions, experience has shown that there are a number of feasible control measures that can be reasonably implemented to significantly reduce particulate emissions from construction. The SJVAPCD has determined that, except in the case of very large project, such as the proposed project, compliance with Regulation VIII for all sites and implementation of other control measures constitutes sufficient mitigation to reduce fugitive dust impacts to a level considered less-than-significant.

TABLE 5.3-2

PROJECT CONSTRUCTION CRITERIA POLLUTANT EMISSIONS (UNMITIGATED)

Year/Emission Source	ROG (tons/year)	NOx (tons/year)	PM10 (tons/year)	PM2.5 (tons/year)
Year 2010 (Phase 1)	0.90	7.46	13.58	3.10
Year 2011 (Phase 1)	6.09	48.88	2.71	2.13
Year 2012 (Phases 1 and 2)	52.93	29.44	8.25	2.77
Year 2013 (Phases 2, 3, and 4)	14.35	9.37	7.21	1.90
Year 2014 (Phases 3 and 4)	3.73	11.62	11.59	2.89
Year 2015 (Phases 3 and 4)	9.30	12.96	1.12	0.87
Year 2016 (Phases 3 and 4)	9.08	11.82	1.04	0.79
Year 2017 (Phases 3 and 4)	8.83	10.74	0.97	0.73
Year 2018 (Phases 3 and 4)	8.69	9.84	0.91	0.67
Year 2019 (Phases 3 and 4)	8.52	9.00	0.85	0.62
Year 2020 (Phase 5)	9.69	9.02	20.15	4.55
Year 2021 (Phase 5	12.42	8.93	0.86	0.62
Year 2022 (Phase 5)	12.37	8.90	0.86	0.62
SJVAPCD Thresholds (tons/year)	10.00	10.00	15.00	NT
Potentially Significant Impact	**Yes**	**Yes**	**Yes**	No

Notes:
Pollutant emissions are displayed in the units that allow direct comparison with the SJVAPCD significance thresholds (i.e., 10 tons/year for ROG and NOx, and 15 tons/year for PM_{10}).
Source: PBS&J, 2009. Based on URBEMIS 2007 Version 9.2.4.

As required by SJVAPCD Regulation VIII, the project must require all construction activities that are capable of generating fugitive dust to implement dust control measures during each phase of project construction to reduce the amount of particulate matter generated. These measures include the following:

1. All disturbed areas, including storage piles, that are not being actively utilized for construction purposes shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
2. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
3. All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.

4. When materials are transported off-site, all material shall be covered or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container shall be maintained.
5. All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions; use of blower devices is expressly forbidden.)
6. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
7. Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
8. Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

The proposed project would also be required to comply with other applicable SJVAPCD rules and regulations, including Rule 4601, which limits emissions associated with painting activities, and Rule 4641, which limits the types of paving activities and the manner in which they are conducted to reduce ROG emissions. It should also be noted that any development within the project site would comply with the SJVAPCD's Indirect Source Rule 9510 (Rule 9510), which requires the preparation of a site-specific AIA for any development of 2,000 square feet of commercial space or 25,000 square feet of light industrial space, as well as similar criteria for other land use types. In addition, due to the fact that project would result in a disturbance area of more than 5 acres for non-residential development, the applicant is required to submit a Dust Control Plan to the SJVAPCD's Air Pollution Control Officer (APCO).

However, as stated within the SJVAPCD GAMAQI, compliance with SJVAPCD rules, including Regulation VIII, do not, in and of themselves, ensure that construction impacts would be less than significant due to the size of the proposed project. As shown in Table 5.3-2, the proposed project's unmitigated emissions of ozone precursors would exceed SJVAPCD thresholds for annual emissions. Consequently, impacts would be ***potentially significant***.

Mitigation Measures

The following mitigation measure shall be implemented to reduce the potential criteria air pollutant emissions that would occur during construction of the proposed project. In addition, development of the project site would be subject to the SJVAPCD rules and requirements, including Rule 9510. As part of Rule 9510 compliance, new development would be required to file an application with the SJVAPCD regarding the proposed development, if applicable, and achieve a 33 percent reduction from baseline NO_x emissions and a 50 percent reduction from baseline PM_{10} emissions. Any development within the boundaries of the site, similar to other development within the City, would then be required to incorporate emission reduction measures into the project and/or pay ISR fees as required by SJVAPCD in the permit.

With respect to construction emissions, the proposed project would not exceed SJVAPCD thresholds for PM_{10} and would be in compliance with Rule 9510 with implementation of mitigation and conformance with Regulation VIII. However, construction emissions would still exceed SJVAPCD thresholds for ROG and NO_x with incorporation of the following mitigation measure and with compliance with Rule 9510. Table 5.3-3 identifies the mitigated construction emissions associated with the proposed project. As such, impacts would be considered ***significant and unavoidable***.

TABLE 5.3-3

PROJECT CONSTRUCTION CRITERIA POLLUTANT EMISSIONS (MITIGATED)

Year/Emission Source	ROG (tons/year)	NOx (tons/year)	PM10 (tons/year)	PM2.5 (tons/year)
Year 2010 (Phase 1)	0.90	7.46	7.21	1.77
Year 2011 (Phase 1)	6.09	48.88	2.71	2.13
Year 2012 (Phases 1 and 2)	48.04	29.44	5.12	2.12
Year 2013 (Phases 2, 3, and 4)	13.07	9.37	4.03	1.24
Year 2014 (Phases 3 and 4)	2.11	11.62	6.39	1.80
Year 2015 (Phases 3 and 4)	3.77	12.96	1.12	0.87
Year 2016 (Phases 3 and 4)	3.54	11.82	1.04	0.79
Year 2017 (Phases 3 and 4)	3.32	10.74	0.97	0.73
Year 2018 (Phases 3 and 4)	3.15	9.84	0.91	0.67
Year 2019 (Phases 3 and 4)	2.99	9.00	0.85	0.62
Year 2020 (Phase 5)	3.50	9.02	10.71	2.58
Year 2021 (Phase 5	5.11	8.93	0.86	0.62
Year 2022 (Phase 5)	5.09	8.90	0.86	0.62
Maximum Annual Emissions prior to Rule 9510 Compliance	**48.04**	**48.88**	**10.71**	**2.58**
Percent reduction from unmitigated emissions required by Rule 9510	—	33.3%	50%	—
Maximum Annual Emissions after Rule 9510 Compliance[1]	48.04	32.6	10.10	2.58
SJVAPCD Thresholds (tons/year)	10.00	10.00	15.00	NT
Significant Impact	**Yes**	**Yes**	No	No
Percent Reduction Achieved with Mitigation and Rule 9510 Compliance	9.2%	33.3%	50.00%	43.30%

Notes:
1. The reduction noted is based upon the unmitigated totals, shown in Table 5.3-2.
2. Modeling assumes construction (excavation, grading, and other construction activities) would be limited to one activity at a time.
3. Modeling assumes heavy construction equipment would be limited to 8 hours per day, 5 days per week.

Pollutant emissions are displayed in the units that allow direct comparison with the SJVAPCD significance thresholds (i.e., 10 tons/year for ROG and NOx, and 15 tons/year for PM_{10}).
Source: PBS&J, 2009. Based on URBEMIS 2007 Version 9.2.4.

5.3-1 *The construction contractor shall implement the following measures during construction activities:*

- § *Require that all diesel engines be shut off when not in use to reduce emissions from idling.*
- § *Minimize the obstruction of traffic on adjacent roadways.*
- § *Water the active construction area three times per day during grading activities.*
- § *Use low-VOC paint during the painting of all residential and non-residential structures.*

5.3-2 Operation of the proposed project would generate emissions that may exceed SJVAPCD thresholds for ROG, NO_x and PM_{10}.

Operational emissions generated by both stationary and mobile sources would result from day-to-day activities on the project site after occupation. Stationary, area source emissions would be generated by the consumption of natural gas for space and water heating devices, and the operation of landscape maintenance equipment. Mobile emissions would be generated by motor vehicles traveling to and from the project site.

The analysis of annual operational emissions from the proposed project was prepared using the URBEMIS 2007 computer model recommended by the SJVAPCD. Trip generation rates in the project traffic study (see section 5.9), were used to determine operational emissions.

Per direction from SJVAPCD, stationary and mobile source emissions are assessed separately and evaluated against SJVAPCD thresholds separately.[13]

Area Emissions

As noted above, area source emissions would occur as a result of water and space heating, the use of fireplaces, landscape and property maintenance, and repainting associated with upkeep of the proposed uses. As shown in Table 5.3-4, which identifies the annual emissions associated with these activities as a result of operation of the proposed project and the uses associated with it, annual area source emissions are anticipated to exceed SJVAPCD thresholds for ROG, NO_x, and PM_{10}, and therefore are considered ***potentially significant***.

TABLE 5.3-4

PROPOSED PROJECT ANNUAL OPERATIONAL AREA EMISSIONS (UNMITIGATED)[1]

Emissions Source	Emissions in Tons per Year			
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Water and Space Heating	0.95	12.62	0.02	0.02
Hearth	11.35	2.03	16.80	16.17
Landscape Maintenance	1.83	0.13	0.03	0.03
Consumer Products	27.62	—	—	—
Architectural Coatings	12.82	—	—	—
Maximum Annual Area Emissions	**54.57**	**14.78**	**16.85**	**16.22**
SJVAPCD Thresholds (tons/year)	10.00	10.00	15.00	NT[2]
Significant Impact	**Yes**	**Yes**	**Yes**	No

Notes:
1. Emissions shown do not reflect compliance with SJVAPCD Rule 9510.
2. No recommended threshold of significance.

Source: PBS&J 2009. Calculation sheets are provided in Appendix C.

13 McDonough, David. Email to PBS&J re: NOP 20090049 Austin Road Business Park and Residential Community Project. November 9, 2009 (4:52 pm).

Mobile Sources

Mobile source emissions associated with the proposed project would include vehicle trips to and from the proposed residences, commuter trips to the proposed office and commercial space, and truck traffic to and from the proposed warehouse facilities. As shown in Table 5.3-5, based on the level of development anticipated under the proposed project, motor vehicle emissions are anticipated to exceed SJVAPCD thresholds for ROG, NO_x, and PM_{10}. As such, impacts are considered ***potentially significant***.

TABLE 5.3-5

PROPOSED PROJECT ANNUAL OPERATIONAL MOBILE EMISSIONS (UNMITIGATED)

Emissions Source	Emissions in Tons per Year			
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Motor Vehicles	68.47	97.44	101.26	22.37
Maximum Annual Emissions	**68.47**	**97.44**	**101.26**	**22.37**
SJVAPCD Thresholds (tons/year)	10.00	10.00	15.00	NT[1]
Significant Impact	**Yes**	**Yes**	**Yes**	No

Note:
1. No recommended threshold of significance.
Source: PBS&J 2009. Calculation sheets are provided in Appendix C.

Mitigation Measures

The following mitigation measures shall be implemented to reduce the potential criteria air pollutant emissions of the proposed project. In addition, development of the project site would be subject to the SJVAPCD rules and requirements, including Rule 9510. As part of Rule 9510 compliance, new development would be required to file an application with the SJVAPCD regarding the proposed development, if applicable, and achieve a 33 percent reduction from baseline NO_x emissions and a 50 percent reduction from baseline PM_{10} emissions. Any development within the boundaries of the site would then be required to incorporate emission reduction measures into the project and/or pay ISR fees as required by SJVAPCD in the permit.

With respect to area emissions, the proposed project would not exceed SJVAPCD thresholds for NO_x and PM_{10} and would be in compliance with Rule 9510 with implementation of mitigation. It is important to note that with the mitigation measures included herein, the 33 percent reduction in NO_x emissions and 50 percent reduction in PM_{10} emissions required by Rule 9510 would be achieved for area-wide emissions and no further measures to demonstrate a reduction in such emissions would be necessary. As shown in Tables 5.3-6 and 5.3-7, which identify the mitigated emissions associated with the proposed project, mobile source emissions would still exceed SJVAPCD thresholds with incorporation of the following mitigation measures and compliance with Rule 9510. As such, impacts would be considered ***significant and unavoidable***.

5.3-2 a) *The project applicant shall achieve residential, commercial, and industrial energy efficiency that exceeds 2008 Title 24 standards by 15 percent. The applicant shall demonstrate achievement of 15 percent exceedance to the City prior to approval of building permits.*

b) *The City shall verify, prior to approval of building permits, that natural gas fireplaces will be incorporated into all residential development, in place of wood and/or pellet burning stoves/fireplaces.*

c) *The City shall require residential and nonresidential development to use low VOC paint and electrical landscape equipment through deed restrictions.*

TABLE 5.3-6

PROPOSED PROJECT ANNUAL OPERATIONAL AREA EMISSIONS (MITIGATED)

Emissions Source	Emissions in Tons per Year			
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Water and Space Heating	0.76	10.10	0.02	0.02
Hearth	0.02	0.01	—	—
Landscape Maintenance	1.47	0.10	0.02	0.02
Consumer Products	27.62	—	—	—
Architectural Coatings	11.54	—	—	—
Maximum Annual Area Emissions prior to Rule 9510 Compliance	**41.41**	**10.21**	**0.04**	**0.04**
Additional Percentage Reduction Achieved Through Rule 9510 Compliance	—	2.08%	0%	—
Maximum Annual Area Emissions post Mitigation and Rule 9510 Compliance	**41.41**	**9.90**	**0.04**	**0.04**
SJVAPCD Thresholds (tons/year)	10.00	10.00	15.00	NT[1]
Significant Impact	**Yes**	No	No	No
Percent Reduction Achieved with Mitigation and Rule 9510 compliance	24.12%	33.00%	99.76%	99.75%

Note:
1. No recommended threshold of significance.
Source: PBS&J 2009. Calculation sheets are provided in Appendix C.

TABLE 5.3-7

PROPOSED PROJECT ANNUAL OPERATIONAL MOBILE EMISSIONS (MITIGATED)

Emissions Source	Emissions in Tons per Year			
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Motor Vehicles	60.47	75.90	76.62	16.96
Maximum Annual Emissions prior to Rule 9510 Compliance	**60.47**	**75.90**	**76.62**	**16.96**
Percent reduction from unmitigated emissions required by Rule 9510	—	33.3%	50%	—
Maximum Annual Emissions after Rule 9510 Compliance	60.47	51.65	39.09	16.96
SJVAPCD Thresholds (tons/year)	10.00	10.00	15.00	NT[1]
Significant Impact	**Yes**	**Yes**	**Yes**	No
Percent Reduction Achieved with Mitigation and Rule 9510 Compliance	1.64%	33.3%	50.00%	2.14%

Note:
1. No recommended threshold of significance.
Source: PBS&J 2009. Calculation sheets are provided in Appendix C.

d) *The project applicant shall incorporate electrical outlets into the exterior design of all proposed structures to promote the use of electrical landscape equipment.*

5.3-3 Uses developed within the proposed project could expose sensitive receptors to project-generated toxic air emissions.

The assessment of cancer health risks associated with exposure to toxic air emissions is typically associated with chronic-exposure, in which a 70-year exposure period is often assumed. The risk to sensitive receptors associated with exposure to TACs depends upon a number of factors, including wind direction, wind speed, DPM concentration, length of exposure, existing DPM concentration in the air, and distance from the source. Although there is a potential for cancer to result from exposure periods of less than 70 years, periods of acute exposure to diesel exhaust are not anticipated to result in an increased health risk because the potential exposure is not chronic in nature. The exposure of sensitive receptors to toxic air emissions from construction equipment, stationary sources, and mobile sources are discussed separately below.

Construction

During construction, the operation of construction equipment could result in potential health risks associated with DPM emitted. Construction activities associated with the proposed project would be short term in nature and would be conducted in various phases at different locations across the project site. Therefore, the proposed project would not be anticipated to result in the prolonged exposure of sensitive receptors in the immediate area to substantial concentrations of diesel exhaust from a single location on the project site. Further, the proposed project would implement dust control measures in compliance with SJAPCD and City requirements to further ensure that construction activities at the project site would not result in the generation of substantial pollutant concentrations attributable to diesel exhaust, including DPM. Thus, impacts are considered *less than significant*. No mitigation is required.

Stationary Sources

Implementation of the proposed project may result in the exposure of existing and proposed sensitive land uses (residential) that would be developed as part of the project to TACs associated with the operation of commercial and industrial uses that may be constructed on the project site. However, pursuant to SJVAPCD Rule 2010, any and all potential sources of TACs are required to obtain appropriate permits from SJVAPCD. Further, as part of SJVAPCD permit compliance, any potential TAC sources included as part of the proposed project would be required to comply with the following SJVAPCD rules:

- Rule 2201 – New and Modified Stationary Source Review;
- Rule 4001 – New Source Performance Standards; and,
- Rule 4002 – National Emissions Standards for Hazardous Air Pollutants.

With adherence to the aforementioned rules, which is required for the development and operation of facilities that have the potential to emit TACs, the potential for human health risks associated with stationary sources on- and off-site would be considered unlikely. As such, impacts would be *less than significant*. No mitigation is required.

Mobile Sources

In 1998, the ARB identified DPM as a TAC. The risk to people associated with exposure to this pollutant depends upon a number of factors, including wind direction, wind speed, DPM concentration, length of exposure, existing DPM concentration in the air, and distance from the source. Diesel vehicles including heavy-duty trucks traveling to and from commercial and industrial areas would be associated with the proposed project, and would generate DPM/TACs.

As previously noted, TACs have historically been associated with point sources or area sources. When a stationary source or area source generates TACs, the SJVAPCD evaluates the emissions and if necessary requires the installation of Best Available Control Technology (BACT). Diesel particulate matter is unique in that it is generated by mobile sources, which are currently unregulated by all air districts, including the SJVAPCD. However, mobile source emissions, including DPM, are regulated by the ARB. The ARB has derived a number of strategies for reducing DPM. These strategies include retrofitting existing engines by installing diesel particulate filters, using alternative fuels, and stricter emission control standards for all new engines.

The nearest sensitive receptors (residences) to the project site are located immediately adjacent to the south of the project along Frederick and Austin Roads. Additional residences are located to the west and northwest. Total mobile source TACs (DPM) from the proposed uses cannot be quantified at this time because specific types of uses have not been identified. The distance needed to protect sensitive receptors would be determined on case-by-case basis as new uses occupy the project site. Such uses would need to be generally consistent with ARB's recommendations in *Air Quality and Land Use Handbook: A Community Health Perspective*. However, because the quantification of potential health risks is not feasible due to the uncertainty of potential uses within the project site, impacts are considered ***potentially significant***.

Mitigation Measure

Implementation of the following mitigation measure would reduce this impact by locating loading/unloading activities associated with commercial/industrial uses away from sensitive receptors to the maximum extent feasible. However, as the type and location of the potential commercial/industrial uses is unknown at this time, potential health effects associated with DPM may not be reduced to a less-than-significant level. As such, impacts are considered ***significant and unavoidable***.

5.3-3 *Prior to approval of a Final Map, the project applicant(s) shall coordinate with the SJVAPCD during the initial stages of an individual project design to determine the potential TAC risk of that use type and scale. Further, the City shall ensure during the plan approval stage that loading docks are located away from existing/proposed residential structures, to the maximum extent feasible.*

5.3-4 Implementation of the proposed project could expose sensitive receptors to toxic air emissions from the adjacent SR 99.

Mobile sources (e.g., automobiles and diesel-fueled trucks) associated with project operation would also generate TACs, but traffic from local roads in the vicinity of the proposed project would not be high enough to produce TAC that would cause adverse health effects for sensitive receptors. For mobile sources, ARB's *Air Quality and Land Use Handbook: A Community Health Perspective* identifies only high traffic freeways and roads as a source of TACs that could present a potentially significant health risk and recommends that local land use agencies provide for specific "buffer zones" between these sources and nearby sensitive receptors. California freeway studies show about a 70 percent drop-off in particulate pollution levels at 500 feet. Recommendations from the ARB Handbook applicable to the proposed project include avoiding siting 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.[14]

As a refinement to the ARB Handbook, the Sacramento Metropolitan Air Quality Management District (SMAQMD) has prepared the *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways*, which was most recently updated in March 2009. This protocol sets a screening threshold (296 per million) under which potential health risk impacts are not anticipated. The screening threshold was selected by SMAQMD as that level of increased individual risk corresponding to a 70 percent reduction from the highest risk calculated at distances from the edge of the nearest travel lane to the nearest sensitive receptor for peak-hour traffic volumes. The nearest potential residence to SR 99 could be located within the portion of the project site designated as Commercial Mixed Use (refer to Figure 2-2) and 100 feet from the nearest travel lane. Based on 2008 Volume Data from Caltrans for SR 99 in the vicinity of the project site, approximately 20,400 vehicle trips may travel along SR 99 and past the project site during the peak hour.[15] Based on the location of the project site (south and west of the SR 99) and the peak hour volumes along the nearby SR 99 segment, the location of the proposed residential uses as part of the project may exceed the thresholds identified in the refined protocol and in Table 5.3-8. As such, impacts would be considered ***potentially significant***.

TABLE 5.3-8

SCREENING EVALUATION OF POTENTIAL CANCER RISK TO PROPOSED RESIDENCES ATTRIBUTABLE TO SR 99

Peak Hour Traffic (vehicle/hr)	Receptor Distance from Edge of Nearest Travel Lane (feet)							
	10	**25**	**50**	**100**	**200**	**300**	**400**	**500**
Incremental Cancer Risk Per Million: West (upwind)								
24,000	922	731	623	366	229	169	130	108
Incremental Cancer Risk Per Million: South (upwind)								
24,000	687	572	452	321	207	156	124	102
Distance between SR 99 and nearest proposed residence							100	

Source: Sacramento Metropolitan Air Quality Management District. *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways*. March 2009, p. 11.

14 California Air Resources Board. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*, April, p. 4.

15 Caltrans. Traffic and Vehicle Data Systems Unit – 2008 All Traffic Volumes on California State Highway System. <www.dot.ca.gov/hq/traffops/saferesr/trafdata/2008all.htm> (November 12, 2009).

Mitigation Measure

The proposed project has the potential to expose future on-site residents to substantial TAC due to the proximity of the potential residences within the Commercial Mixed-Use area of the proposed project to SR 99. However, Mitigation Measure 5.3-4 would require that no residences be located within 250 feet of the nearest travel lane of SR 99. As such, the exposure of the nearest potential residence to potential health risks associated with SR 99 would not exceed established screening threshold (296 per million). Thus, impacts would be reduced to a ***less-than-significant level***.

5.3-4 *No residential structure shall be located within 250 feet of the nearest travel lane of SR 99and/or 200 feet from centerline of the railroad.*

5.3-5 Operation of the proposed project would generate increased local traffic volumes, which would increase localized carbon monoxide (CO) concentrations in the area.

Consistent with SJVAPCD GAMAQI direction, CALINE4, a dispersion model for predicting air pollutant concentrations near roadways, was used to predict future CO concentrations at several study-area intersections under existing with project and future with project conditions. The results of these calculations are presented in Table 5.3-9. As shown in the table, CO concentrations under future-plus-project conditions near these intersections would not exceed federal or State ambient air quality standards. Therefore, CO hotspots would not occur near these intersections under either existing or future conditions and the contribution of the project to traffic-related CO at these intersections would be ***less than significant***.

Mitigation Measure

None required.

Cumulative Impacts and Mitigation Measures

A significant impact could occur if a project would add a cumulatively considerable contribution of a federal or State nonattainment pollutant (e.g. NO_x, Ozone, CO, and PM_{10}). Because the Basin is currently in nonattainment for ozone, projects could exceed an air quality standard or contribute to an existing or projected air quality exceedance. With regard to determining the significance of the proposed project's contribution, the SJVAPCD neither recommends a quantified analysis of cumulative operational emissions, nor provides methodologies or thresholds of significance to be used to assess cumulative operational impacts. Instead, the SJVAPCD recommends that a project's potential contribution to cumulative impacts be assessed using the same significance criteria as those for project-specific impacts. Therefore, this analysis assumes that air quality impacts of individual development projects that exceed the SJVAPCD-recommended thresholds for project-specific impacts would also cause a cumulatively considerable air quality impact in the Basin. A cumulative impact analysis is provided only for those impacts that result in a *significant and unavoidable impact*.

As discussed in Impact 5.3-1, construction of the proposed project would generate emissions that exceed the thresholds of significance recommended by the SJVAPCD for ROG and NO_x even with implementation of all feasible mitigation measures and compliance with SJVAPCD rules and regulations. Because the Basin is in nonattainment for ozone, for which both ROG and NO_x are precursors, this is considered a significant cumulative impact. The proposed project's contribution would be considered significant because the project would exceed the SJVAPCD's thresholds,

TABLE 5.3-9

CARBON MONOXIDE CONCENTRATIONS AT SELECTED LOCATIONS

Intersection[1]	One-Hour Average CO (ppm)	Eight-Hour Average CO (ppm)
Existing Plus Project Conditions		
2. Main Street / SR 120 EB Ramps	5.5	3.0
3. Main Street / Atherton Drive	5.3	2.9
4. Main Street / Woodward Avenue	5.5	2.9
5. Van Ryn Avenue / Industrial Park Drive	5.1	2.7
8. Woodward Avenue / Atherton Drive	6.2	3.4
9. Woodward Avenue / Moffat Boulevard	5.8	3.1
10. Moffat Boulevard / SR 99 SB Ramps	5.9	3.2
12. Austin Road / SR 99 NB Ramps	6.1	3.3
13. Moffat Boulevard / Austin Road	7.3	4.0
25. Austin Road / Ripon Road	5.5	2.9
	One-Hour Average CO (ppm)	**Eight-Hour Average CO (ppm)**
Future Conditions with Project (2025)		
1. Main Street / SR 120 WB Ramps	4.9	2.6
2. Main Street / SR 120 EB Ramps	4.9	2.6
3. Main Street / Atherton Drive	4.9	2.6
4. Main Street / Woodward Avenue	4.9	2.6
5. Van Ryn Avenue / Industrial Park Drive	4.7	2.5
6. Van Ryn Avenue / Woodward Avenue	4.7	2.5
7. Woodward Avenue / Pillsbury Road	4.7	2.5
8. Woodward Avenue / Atherton Drive	4.8	2.5
9. Woodward Avenue / Moffat Boulevard	4.7	2.5
10. Moffat Boulevard / SR 99 SB Ramps	4.8	2.5
12. Austin Road / SR 99 NB Ramps	4.8	2.6
13. Moffat Boulevard / Austin Road	5.0	2.7
14. Austin Road / Yosemite Avenue	4.8	2.5
25. Austin Road / Ripon Road	4.7	2.5

Notes:
1. Numbers for intersections correspond to those provided in the traffic study for the project (see Section 5.9, Transportation and Circulation). Calculations reflect CO levels at the roadway edge.
There are no violations of ambient CO standards at receptor locations at the roadway edge of each intersection. Receptor locations further away would be exposed to even lower CO concentrations.
CO Background:[a]
One-Hour Average—4.4 ppm
Eight-Hour Average—2.31 ppm
Ambient CO Standards:
One-Hour Average—Federal: 35 ppm; State 20 ppm
Eight-Hour Average—Federal and State: 9 ppm
Source: PBS&J, 2009. See calculation sheets in Appendix C.

thereby making a cumulatively considerable contribution to ozone emissions. Thus, because the proposed project would make a cumulatively considerable contribution during construction with regard to SJVAPCD-identified criteria pollutants, and because no additional feasible mitigation is available to reduce the impact, this cumulative impact is considered to be *significant and unavoidable*.

As discussed in Impact 5.3-2, operation of the proposed project would generate emissions that exceed the thresholds of significance recommended by the SJVAPCD for ROG and NO_x, even with implementation of all feasible mitigation measures. This is considered a significant cumulative impact. Further, the proposed project's contribution would be considered significant because the project would exceed the SJVAPCD's ROG and NO_x threshold by itself, thereby making a cumulatively considerable contribution to ozone precursor emissions. Thus, because the proposed project would make a cumulatively considerable contribution with regard to this criteria pollutant, and because no additional feasible mitigation is available to reduce the impact, this cumulative impact is considered to be *significant and unavoidable*.

Construction activities and the use of stationary equipment associated with operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations due to project-generated toxic air emissions. However, based on ARB guidance, potential DPM concentrations resulting from operation of the proposed industrial uses under the project could expose nearby/adjacent sensitive receptors, both existing and proposed, to potential health risks. As potential health risks are assessed based on the incremental contribution of a project, the contribution of the proposed project would be considered cumulatively considerable, and impacts would be considered *significant and unavoidable*.

As discussed in Impact 5.3-5, operation of the proposed project would generate increased local traffic volumes, but would not create nor contribute to a CO hotspot. As shown in Table 5.3-9, under cumulative conditions, which were modeled using the CALINE4 dispersion model to predict future CO concentrations at 14 study-area intersections, buildout of the proposed project, inclusive of regional growth, would not cause localized CO concentrations to exceed State and/or federal ambient air quality standards. Therefore, the project's contribution would not be considerable. This is considered a *less-than-significant cumulative impact*.

5.4 BIOLOGICAL RESOURCES

5.4 BIOLOGICAL RESOURCES

INTRODUCTION

This section addresses potential effects on biological resources of the proposed Austin Road Business Park and Residential Community (ARBPRC) project. Existing site characteristics, such as habitat types and plant and animal species present, are described based on site-specific information developed for the proposed project, site field visit, and published technical information, as indicated in footnoted references. The primary sources of information referenced in this section regarding biological resources include the following:

- California Department of Fish and Game's (CDFG) February 2006 Special Animals list;
- CDFG's Natural Diversity Database (CNDDB), Rarefind 3 database program, California Department of Fish and Game, Updated March 2008;
- U.S. Fish and Wildlife Service's (USFWS) website March 2008; and
- A March 11, 2008 reconnaissance-level visit to the project site and utility corridors conducted by PBS&J.

ENVIRONMENTAL SETTING

The project site is located south of E. Woodward Avenue and SR 99, west of south Olive Avenue, east of and west of Austin Road in San Joaquin County, California. It is located on the Manteca USGS 7.5 minute quadrangle map (R7E, T2S, Sections 10, 14, and 15). Historically, vegetation in the region consisted primarily of riparian and freshwater marsh communities with native grasslands, oak woodlands, vernal pools, and seasonal wetlands in the upland areas away from the main river channel. Over time, many of these communities have been replaced by non-native naturalized vegetation communities (e.g., ruderal (weedy) communities), due to agricultural and urban conversion and other infrastructure activities (i.e., transmission, transportation and flood control projects). Agricultural land is currently the most common vegetation type in the region, including row crops, vineyards, and orchards. Additional communities in the area include ruderal and urban habitats.

An assessment of jurisdictional wetlands and waters was conducted by a PBS&J biologist on March 11, 2008 to determine whether there are any wetlands and/or Waters of the U.S. subject to jurisdiction of the U.S. Army Corps of Engineers (Corps) on the project site. The project site has been significantly altered due to current agricultural activity and evidence of wetlands or Waters of the U.S. were not observed during the March 11, 2008 survey. A description of habitat types found within or adjacent to the project site is provided below.

Habitats

Agricultural Land

The majority of the project site and much of the surrounding region is comprised of agricultural land. During the time of the survey, agricultural land in the project site consisted of a combination of disked fields, row crops, vineyards, and orchards. Wildlife species observed during the March 11, 2008 field survey include yellow-billed magpie (*Pica nuttalli*), house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura*), and western meadowlark (*Sturnella neglecta*). Other wildlife species expected to occur in the vicinity of the project site include northern mockingbird (*Mimus polyglottos)*, western scrub jay (*Aphelocoma coerulescens*), house mouse (*Mus musculus*), black rat (*Rattus rattus*), Norway rat (*Rattus norvegicus*), striped skunk (*Mephitis mephitis*), opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and coyote (*Canis latrans*). Several trees were observed along the edges of the agricultural land, including *Prunus* ssp., palms (*Phoenix canariensis*), and olives (*Olea europaea*).

Ruderal Grassland

The ruderal communities consist of introduced annual and perennial grasses, and forbs associated with highly disturbed habitats. Ruderal vegetation occurs throughout the project site along improved roads, rail alignments, agricultural roads, and in small undeveloped, but disturbed areas associated with urban development. Plant species observed in this habitat include wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), Russian thistle (*Salsola tragus*), prostrate pigweed (*Amaranthus blitoides*), shepherd's purse (*Capsella bursa-pastoris*), wild radish (*Raphanus sativus*), wild mustard (*Brassica* spp.), prickly lettuce (*Lactuca serriola*), common groundsel (*Senecio vulgaris*), cheeseweed (*Malva parviflora*), white horehound (*Marrubium vulgare*), goosefoot (*Chenopodium* spp.), fiddleneck (*Amsinckia* sp.), and horseweed (*Conyza canadensis*). Wildlife species found in this habitat type would be similar to those found within agricultural land as listed above.

Urban

Urban land consists of scattered residences, a winery, and commercial and light industrial land uses. Vegetation consists primarily of ornamental trees, shrubs, grasses associated with landscaped portions of the urban areas. Wildlife use of the urban areas is expected to be very limited, as only those species tolerant of regular human disturbance would be expected to occur there. Typical wildlife species expected to occur in urban portions of the project site include mourning dove, scrub jay, house sparrow, northern mockingbird, European starling, black and Norway rats, and house mouse.

SPECIAL-STATUS SPECIES

The potential occurrence of special-status plant and animal species within the project site and surrounding area has been determined through habitat information collected through a review of the

CDFG's CNDDB, the USFWS online species list database (see Appendix D), and the March 11, 2008 reconnaissance field survey.

For the purposes of this section, special-status species include:

- species listed, proposed, or candidate species for listing as Threatened or Endangered by the USFWS pursuant to the Federal Endangered Species Act (FESA) of 1969, as amended;
- species designated as Species of Concern by the USFWS (note: although this status designation does not itself trigger any FESA requirements, many of the species that have this designation meet the definition of rare, threatened, or endangered under CEQA);
- species listed as Rare, Threatened, or Endangered by the CDFG pursuant to the California Endangered Species Act (CESA) of 1970, as amended;
- species designated as Fully Protected under Sections 3511 (birds), 4700 (mammals), and 5050 (reptiles and amphibians) of the California Fish and Game Code;
- species designated by the CDFG as California Species of Concern;
- plant species listed as Category 1B and 2 by the California Native Plant Society (CNPS); and
- species not currently protected by statute or regulation, but considered rare, threatened or endangered under CEQA (Section 15380).

According to the CNDDB, a total of 17 special-status species and four sensitive communities are known to occur in the vicinity of the proposed project. These species along with their status and likelihood of occurrence on the site are listed in Table 5.4-1. This list represents those species identified in the technical review having the highest likelihood to occur on the project site (i.e., within the known range, and/or with potential habitat present). Species identified by these sources as potentially occurring in the area, but for which there is no suitable habitat, and the project site is outside the known range of the species, are not addressed further.

A rating of "observed" indicates that the species has been observed on the site; "high" indicates that the species has not been observed, but sufficient information is available to indicate suitable habitat and conditions are present on-site and the species is expected to occur on-site; "moderate" indicates that it is not known if the species is present, but suitable habitat exists on-site; "low" indicates that species was not found during biological surveys conducted to date on the site and may not be expected, given the species' known regional distribution or the quality of habitats located on the site, and "none" indicates that the species would not be expected to occur in the project site because either the site is not within the known range of the species, or there is no suitable habitat present there. Based on the available habitat, only three of these species have potential habitat at the project site and, therefore, could potentially be affected by the project. Descriptions of these three species are provided below.

TABLE 5.4-1

SPECIAL STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE PROJECT SITE

Scientific Name	Common Name	Status Fed/State/ Other	Habitat	Likelihood of Occurrence in the Project site
Plants				
Atriplex minuscule	Lesser saltscale	--/--/1B	Occurs on alkaline, sandy soils in chenopod scrub, playas, and valley and foothill grasslands. Elevations range from 15 to 200 meters. Blooms May through October.	**None:** No suitable habitat for this species on in the project site.
Blepharizonia plumosa	Big tarplant	--/--/1B	Occurs on valley and foothill grasslands. Elevations range from 30 to 505 meters. Blooms July through October.	**None:** No suitable habitat for this species on in the project site.
Eryngium racemosum	Delta button-celery	--/SE/1B	Occurs in riparian scrub or vernally mesic clay depressions. Elevations range from 3 to 30 meters. Blooms June through September.	**None:** No suitable habitat for this species on in the project site.
Invertebrates				
Branchinecta lynchi	Vernal pool fairy shrimp	FT/--/CSA	Occurs in vernal pools and other seasonal wetlands in open grasslands. Does not occur in areas subject to flooding from large rivers or other waterways.	**None:** No suitable vernal pool habitat present within the project site.
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT/--/CSA	Entirely dependent on elderberry shrubs (*Sambucus* spp.) for all stages of it's life cycle. Occurs in or near riparian habitats where their elderberry host plant is present.	**None:** No elderberry shrubs present in the project site.
Lepidurus packardi	Vernal pool tadpole shrimp	FE/--/CSA	Occurs in vernal pools and other seasonal wetlands in open grasslands. Does not occur in areas subject to flooding from large rivers or other waterways.	**None:** No suitable vernal pool habitat present within the project site.
Linderiella occidentalis	California linderiella	--/--/CSA	Occurs in vernal pools and other seasonal wetlands in open grasslands. Does not occur in areas subject to flooding from large rivers or other waterways.	**None:** No suitable vernal pool habitat present within the project site.
Branchinecta conservatio	Conservancy fairy shrimp	FE/--/CSA	Occurs in vernal pools and other seasonal wetlands in open grasslands. Does not occur in areas subject to flooding from large rivers or other waterways.	**None:** No suitable vernal pool habitat present within the project site.
Amphibians				
Ambystoma californiense	California tiger salamander	FT/CSC/CSA	Grasslands and open oak woodlands with large, deep vernal pools, depressional seasonal wetlands or other fishless water bodies for breeding. Aestivates in small mammal burrows and similar shelters in upland areas.	**None:** No habitat present within project site.
Birds				
Agelaius tricolor	Tricolored blackbird	--/CSC/CSA	Forages in grasslands and marsh habitats. Typically nests in dense stands of tules or cattails, but will also use blackberry brambles, or dense stands of herbaceous plants such as milk thistle.	**None:** No habitat present within project site.

TABLE 5.4-1

SPECIAL STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE PROJECT SITE

Scientific Name	Common Name	Status Fed/State/ Other	Habitat	Likelihood of Occurrence in the Project site
Athene cunicularia	Burrowing owl	--/CSC/ CSA	Nests in small mammal burrows in open grasslands. Will only nest in areas with very low or sparse vegetation. Forages in open grasslands and agricultural fields.	**Low:** Suitable nesting, and foraging habitat within the project site. Not observed during surveys.
Buteo swainsoni	Swainson's hawk	--/ST/CSA	Forages in a wide variety of open habitats such as grasslands, open scrub, and agricultural fields. Nests in large, typically riparian trees, but will occasionally use ornamental species such as Eucalyptus if they are near foraging habitat.	**Moderate:** Numerous nesting records for this species in the CNDDB within 5 miles of the project site. Suitable nesting and foraging habitat present within and adjacent to the project site. A nest structure was observed in a pine tree along Austin Road during the survey.
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	FC/SE/--	Requires dense, large tracts of riparian woodlands with well developed understories for breeding. Occurs in deciduous trees and shrubs, especially willows which are required for roost and nest sites. During the breeding season, associated with moist habitats along slow-moving watercourses where humidity is high.	**None:** No habitat present within project site.
Elanus leucurus	White-tailed Kite	--/--/CSA, CFP	Forages in grasslands and croplands. Nests, sometimes communally, in large trees adjacent to foraging habitat.	**Moderate:** Species is known to occur in the region. Suitable nesting and foraging habitat present within and adjacent to the project site. A nest structure was observed in a pine tree along Austin Road during the survey.
Melospiza melodia maxillaris	Suisun song sparrow	--/CSC/ CSA	Inhabits brackish and freshwater aquatic habitats. It usually forages on ground or in low vegetation, under cover of dense thickets or wetland vegetation. Tall bulrush stems are often used for song and calling perches.	**None**. No suitable habitat within the project site.
Mammals				
Sylvilagus bachmani riparius	Riparian brush rabbit	FE/SE/--	Occurs in dense riparian undergrowth, including blackberry (*Rubus* spp.), wild rose (*Rosa californica*), wild grape (*Vitis californica*), and coyote brush (*Baccharis pilularis*). Only known from Caswell Memorial State Park along the Stanislaus River, and along San Joaquin River at Paradise Cut and Stewart Tract.	**None**. No suitable habitat within the project site.
Neotoma fuscipes riparia	Riparian (San Joaquin Valley) woodrat	FE/--/CSC-	Occurs in dense riparian undergrowth, including blackberry (*Rubus* spp.), wild rose (*Rosa californica*), wild grape (*Vitis californica*), and coyote brush (*Baccharis pilularis*). Only known from Caswell Memorial State Park along the Stanislaus River.	**None**. No suitable habitat within the project site.

TABLE 5.4-1

SPECIAL STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE PROJECT SITE

Scientific Name	Common Name	Status Fed/State/ Other	Habitat	Likelihood of Occurrence in the Project site

Status Codes:

Federal:
FE – Listed as Endangered under the Federal Endangered Species Act
FT – Listed as Threatened under the Federal Endangered Species Act

State:
SE – Listed as Endangered under the California Endangered Species Act
ST – Listed as Threatened under the California Endangered Species Act
FP – California Fully Protected Species
CSC – California Species of Special Concern
CSA – This species is included on the California Department of Fish and Game's Special Animals list.
CFP – California Fully Protected Species

California Native Plant Society (CNPS)
1B - CNPS Ranking. Defined as plants that are rare, threatened or endangered in California and elsewhere.
2 - CNPS Ranking. Defined as plants that are rare, threatened or endangered in California, but are more common elsewhere.

Source: California Natural Diversity Database, Updated March 2008; U.S. Fish and Wildlife Service Species List, Updated January 2008.

Burrowing owl (*Athene cunicularia*)

Burrowing owl is a State species of special concern and is federally protected under the Migratory Bird Treaty Act. Burrowing owls feed on rodents, small reptiles, and large insects in annual grasslands, pastures, and ruderal vegetation. They breed between March and August in communal burrow colonies that they have taken over from California ground squirrels (*Spermophilus beecheyi*) and other burrowing mammals. Potential nesting and foraging habitat for this species occurs along the UPRR tracks, and in the adjacent agricultural fields. Burrowing owl was not observed within the proposed project site during the March 11, 2008 survey, but several unoccupied burrows were observed along fence lines around the project site.

Swainson's Hawk (*Buteo swainsoni*)

Swainson's hawk is a State listed threatened species. It breeds in tall trees in juniper-sage flats, riparian areas, agricultural fields, or oak savannah adjacent to suitable foraging habitat such as grasslands and alfalfa or grain fields with rodent populations. Threats to Swainson's hawk include development, resulting in the loss of foraging and nesting habitat. The agricultural fields within and adjacent to the project site represent suitable foraging habitat for Swainson's hawk. Two large nest structures were observed in a pine tree (*Pinus* sp.) along Austin Road on private property. The nest structures were in the upper portion of the crown of the tree and had a platform structure. No birds were observed occupying the nest structures during the March 11, 2008 survey.

White-tailed kite (*Elanus leucurus*)

White-tailed kite is a California "fully protected" raptor, and is listed on the CDFG Special Animals list. White-tailed kites feed on rodents, small reptiles, and large insects in fresh emergent wetlands, annual grasslands, pastures, and ruderal vegetation. They breed between February and October. Unlike other raptors, kites often roost, and occasionally nest, communally; therefore, disturbance of a relatively small roost or nesting area could affect a large number of birds. The project site provides potential foraging and nesting habitat for white-tailed kite. Although this species has not been observed during field surveys conducted on the project site, the white-tailed kite is fairly common in the region and could use the site for foraging and/or nesting. This species was not observed during the March 11, 2008 survey.

REGULATORY SETTING

The following goals and policies from the USFWS, Corps, CDFG, and San Joaquin County are applicable to the proposed project:

Federal

Federal Endangered Species Act

FESA was enacted in 1973. Under FESA, the Secretary of the Interior and the Secretary of Commerce, jointly have the authority to list a species as threatened or endangered (16 United States

Code [USC] 1533[c]). FESA is administered by both the National Marine Fisheries Service (NMFS) and the USFWS. NMFS is accountable for animals that spend most of their lives in marine waters, including marine fish, most marine mammals, and anadromous fish, such as Pacific salmon. The USFWS is accountable for all other federally-listed plants and animals.

Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present in the project site and determine whether the proposed project will have a potentially significant impact on such species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]). Therefore, project-related impacts on these species or their habitats would be considered significant and would require mitigation.

The Sacramento Fish and Wildlife Office maintains a list of "Species of Concern" that receive special attention from federal agencies during environmental review, although they are not otherwise protected under FESA. Project-related impacts on such species would also be considered significant under CEQA Guidelines section 15380 and would require mitigation.

Projects that would result in "take" of any federally-listed threatened or endangered species are required to obtain authorization from NMFS and/or USFWS through either Section 7 (interagency consultation) or Section 10(a) (incidental take permit) of FESA, depending on whether the federal government is involved in permitting or funding the project. The Section 7 authorization process is used to determine if a project with a federal nexus would jeopardize the continued existence of a listed species and what mitigation measures would be required to avoid jeopardizing the species. The Section 10(a) process allows take of endangered species or their habitat in non-Federal activities.

Migratory Bird Treaty Act

The Federal Migratory Bird Treaty Act (16 USC, Sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

State

California Endangered Species Act

Under CESA, enacted in 1984, the California Fish and Game Commission (CFGC) has the responsibility for maintaining a list of threatened and endangered species. CDFG also maintains lists of species of special concern, impacts on which would be considered significant under CEQA Guidelines Section 15380 and could require mitigation. Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project site and determine whether the proposed project would have a potentially significant impact on such species. In addition, CDFG

encourages informal consultation on any proposed project which may impact a candidate species. CESA prohibits the take of California listed animals and plants in most cases, but CDFG may issue incidental take permits under special conditions.

Fish and Game Code - Sections 3503, 3503.5, 3513

California Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Fish and Game Code Section 3503.5 protects all birds-of-prey (raptors) and their eggs and nests. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act. These regulations could require that elements of the proposed project (particularly vegetation removal or construction near nest trees) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFG and/or USFWS.

Fish and Game Code B Sections 3511, 4700, 5050, and 5515

Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code designate certain species as "fully protected." Fully protected species, or parts thereof, may not be taken or possessed at any time, and no provision of the California Fish and Game Code or any other law may be construed to authorize the issuance of permits of licenses to take any fully protected species. No such permits or licenses heretofore issued may have any force or effect for any such purpose, except that the CFGC may authorize the collecting of such species for necessary scientific research. Legally imported and fully protected species or parts thereof may be possessed under a permit issued by CDFG.

CEQA Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals, and allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFG (i.e., species of concern) would occur. Whether a species is rare, threatened, or endangered can be legally significant because, under CEQA Guidelines Section 15065, an agency must find an impact to be significant if a project would "substantially reduce the number or restrict the range of an endangered, rare, or threatened species." Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

California Native Plant Society

The CNPS maintains an inventory of special-status plant species. CNPS maintains four species lists of varying rarity. Vascular plants listed as rare or endangered by the CNPS, but which have no designated status or protection under Federal or state-endangered species legislation, are defined as follows:

List 1A Plants Believed Extinct.

List 1B Plants Rare, Threatened, or Endangered in California and elsewhere.

List 2 Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere.

List 3 Plants About Which More Information is Needed - A Review List.

List 4 Plants of Limited Distribution - A Watch List.

In general, plants appearing on CNPS List 1 or 2 are considered to meet CEQA Guidelines section 15380 criteria and impacts on these species are considered in this analysis.

Local

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

San Joaquin County and other participating agencies have prepared the San Joaquin Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) with the goal of protecting special-status plants and wildlife and their habitats, while allowing for planned growth in the County. This protection is accomplished through identification of important habitats and habitat features to aid in the development of protection areas, and the establishment of funding mechanisms through which project proponents can provide replacement habitat while enabling them to meet their no net loss of habitat value goals. Participants under the SJMSCP may conduct SJMSCP-permitted activities that result in or could result in "incidental take" of listed species and other unlisted species should they become listed.

The following goals and policies from the SJMSCP are applicable to the proposed project in the City of Manteca.

Natural Resources

Goal B. 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 of Manteca.

Goal C. To protect sensitive native vegetation and wildlife communities and habitat in Manteca.

Policy

The City shall attempt to ensure in approving new development that its impact on native vegetation and wildlife will be minimized.

New development in the vicinity of the San Joaquin River shall be conditioned to promote and protect riparian, wetlands, and other native vegetation and wildlife communities and habitats.

Agriculture

Goal 6B. To minimize the effect on agricultural lands in South Manteca, while providing for orderly growth.

Policy

6B.5 Encourage the donation of agricultural easements on lands designated for agricultural.

Vegetation and Wildlife

Goal 6C. Protect Sensitive Native vegetation and wildlife communities and habitat in South Manteca.

Policy

6C.1 Minimize impact of new development on native vegetation and wildlife.

City of Manteca General Plan

The following goals and policies from the Manteca General Plan are applicable to the proposed project.

Goal RC-10. Protect sensitive native vegetation and wildlife communities and habitat in Manteca.

Policies

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

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.

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

City of Manteca Municipal Code

Manteca Municipal Code calls for the avoidance of heritage trees. Heritage trees are defined under section 17.61.030 of the code as any natural woody plant rooted in the ground and having a diameter of 30 inches or more when measured two feet above the ground. Section 17.19.060 calls for the protection of all existing trees having a diameter of six inches or more when measured 4½ feet above the ground. The City planning department must be notified of planned construction or grade changes within the proximity of existing mature trees. Existing trees must be protected from construction equipment, machinery, grade changes, and excavation for utilities, paving, and footers. Replacement of existing trees is subject to approval from the planning director and must be with a minimum 24-inch box tree of compatible species for the development site and be consistent with Section 17.19.030. Orchard areas of one acre or more are exempt from section 17.19.060(A);

however, as outlined above, policy RC-P-33 of the City's General Plan discourages the premature removal of orchard trees in advance of development.

Section 12.08.070 of the municipal code prohibits cutting, pruning, removing, injuring, or interference with any tree, shrub, or plant upon or in any street tree area or other public place in the City without prior approval from the superintendent. The City is authorized to grant such permission at their discretion and where necessary. Except for utility companies, as provided in Section 12.08.080, no such permission shall be valid for a longer period than 30 days after its issuance.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

The project setting was developed by reviewing available information on special-status species known to occur in the project vicinity, and on wetlands or their habitat and "other waters of the U.S." This review was supplemented with a field survey to determine which of these species actually occurs or whether potential habitat for these species is present in the project site. The information review included:

1. A query of the CNDDB and USFWS species list databases for the CNDDB Query for the Manteca and Ripon USGS 7.5 minute quadrangle maps, and
2. a review of the habitat requirements of the special-status species determined to have potential to occur in the project site through the above queries.

As stated in the setting section, results of the CNDDB and USFWS queries are provided in Appendix D. Table 5.4-1 provides a list of species with the potential to occur on the project site and the likelihood of occurrence, derived from the CNDDB and USFWS database queries, and based upon the habitat types on the project site.

Potential impacts of the proposed project on these resources were identified by first comparing the habitat requirements of those species identified during the above review to the habitat available on and adjacent to the project site. A determination was then made as to what effect the loss of that potential habitat could have on those species.

Standards of Significance

For the purposes of this EIR, impacts on biological resources are considered significant if the proposed project would:

- 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 CDFG or USFWS;
- Substantially reduce the habitat of a wildlife species such that populations drop below self-sustaining levels;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands 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 by other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or
- Conflict with the provisions of an approved local, regional or state policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Project-Specific Impacts and Mitigation Measures

5.4-1 The proposed project could result in the loss of active burrowing owl nests or burrowing owl nesting habitat.

CNDDB contains a nesting record for burrowing owl within five miles of project site. Burrowing owls and ground squirrels were not observed during the survey. However, several unoccupied burrows, which could provide suitable nesting habitat for burrowing owl, were observed along fence lines around the project site. Suitable foraging habitat, including agricultural land and ruderal grassland, occurs adjacent to these potential nesting sites, and could support breeding populations of burrowing owls. Since no protocol level surveys for this species have been conducted within the project site, it is possible that burrowing owls occur there, but have simply not been observed. Implementation of the proposed project could, therefore, result in the loss of active nests and/or loss of nesting habitat for burrowing owl. Potential disturbance to active nests is, therefore, considered a ***significant impact***.

Mitigation Measure

Implementation of the following mitigation measure would reduce this impact through the avoidance of active nests, relocation of non-breeding burrowing owls, and participation in the SJMSCP, which would reduce this impact to a ***less-than-significant level***.

5.4-1 a) *Discourage the presence of ground squirrels, which would discourage burrowing owls from occupying construction areas, by following one or more measures outlined in Section 5.2.4.15 of the SJMSCP, such as planting and/or retention of tall herbaceous vegetation, regular disking, or physical and chemical control of ground squirrels.*

Within 30 days prior to construction, the project applicant shall retain a qualified biologist to conduct a survey for burrowing owl in all appropriate habitat within 250 feet of the project site. The survey shall follow the 1995 CDFG Burrowing Owl Survey protocol.

If no burrowing owls are found, no further mitigation would be required. If burrowing owls are found, the following mitigation measure shall apply.

b) *Avoid all construction project related disturbances within 250-foot protective buffer around the nest burrow during the breeding season.*

Where feasible, preserve nest burrows and burrow complexes and at least 6-acres of adjacent foraging habitat in place (i.e., in a 6-acre open space preserve).

Where avoidance is not feasible, owls can be passively relocated ONLY during non-breeding season (September 1 through January 31). Passive relocation of burrowing owls, as described in the 1995 CDFG Burrowing Owl Survey Protocol, shall only be conducted in consultation with the CDFG.

No disturbance shall be allowed within 250 feet of a nest site during breeding season, until and unless the CDFG Technical Advisory Committee, with the concurrence of the permitting agencies' representatives on the Technical Advisory Committee, or a qualified biologist approved by the permitting agencies, verifies through non-invasive means that either (1) the birds have not begun egg laying or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. After the fledglings are capable of independent survival, the burrow can be removed.

5.4-2 The proposed project could result in the loss of nesting habitat for Swainson's hawk, white-tailed kite, and other protected raptors.

Nesting records for Swainson's hawk have been recorded in the CNDDB within five miles of project site. Although none of these nest sites occur within or adjacent to the project site, numerous large trees occur on the project site that could provide suitable nesting habitat for Swainson's hawk and other protected raptor species. Two large nest structures were observed in a large pine tree located on private property along Austin Road. No raptors were observed in the nest structures during surveys conducted on the project site, but raptors could potentially begin nesting within the project site prior to implementation of the proposed project. Implementation of proposed project could require removal of some of these trees, which, in combination with other ground disturbance, could result in the loss of active nests, and/or loss of nesting habitat for Swainson's hawk, white-tailed kite, and other protected raptors. All raptors are protected under Sections 3503 and 3511 of the Fish and Game Code, and by the Federal Migratory Bird Treaty Act, and Swainson's hawk is State listed as threatened. Disturbance to active nests is prohibited under these regulations and would, therefore, be considered a ***significant impact***.

Mitigation Measures

Implementation of the following mitigation measures would reduce this impact to a less-than-significant level. If any nesting raptors are identified on the project site, compliance with this mitigation measure would ensure that the birds would not be disturbed during the nesting season

and a qualified biologist would monitor the site to verify that the area is not disturbed. This would reduce this impact to a ***less-than-significant level***.

5.4-2 a) *If construction is to occur between February 16 through August 30, the project applicant, in consultation with the SJCOG and CDFG, shall conduct a pre-construction breeding-season survey of the project site within 30 days prior to when construction is planned to begin. The survey shall be conducted by a qualified biologist to determine if any birds are nesting on or within 100 feet of the construction area.*

If the above survey does not identify any nesting raptor species on the project site, no further mitigation would be required. However, should any active raptor nests be located, the following mitigation measure shall be implemented.

b) *The project applicant, in consultation with the SJCOG and CDFG, shall avoid all bird nest sites located in the project site during the breeding season (approximately February 16 through August 30) while the nest is occupied with adults and/or young. This avoidance could consist of delaying construction to avoid the nesting season. Any occupied nest shall be monitored by a qualified biologist to determine when the nest is no longer used. If the construction cannot be delayed, avoidance shall include the establishment of a non-disturbance buffer zone around the nest site. The size of the buffer zone shall be two times the dripline diameter from the nest, or 100 feet. The buffer zone shall be delineated by highly visible temporary construction fencing.*

Removal of nest trees shall only occur outside the nesting season (non-breeding season), and only in consultation with the SJCOG and CDFG.

5.4-3 The proposed project could result in the loss of foraging habitat for Swainson's hawk.

There are approximately 10 CNDDB nesting records for Swainson's hawk within five miles of project site. Open grassland and certain agricultural crop types (e.g., alfalfa, low growing row crops, etc.) in the project site represent suitable foraging habitat for Swainson's hawk. Implementation of proposed project would result in the loss of foraging habitat for Swainson's hawk in the project site through conversion of open agricultural fields and grasslands to urban development. Swainson's hawk are listed as threatened under the CESA and protected under the Fish and Game Code and Migratory Bird Treaty Act. The CDFG requires replacement of foraging habitat if Swainson's hawk are known to occur within 10 miles of a project site. Therefore, loss of foraging habitat for Swainson's hawk is considered a ***significant impact***.

Mitigation Measure

Implementation of the following mitigation measure would compensate for the loss of Swainson's hawk and other raptor foraging habitat through preservation in perpetuity of an equal amount of suitable foraging habitat elsewhere in the region, which would reduce this impact to a ***less-than-significant level***.

5.4-3 *The project applicant shall comply with the SJMSCP through payment of mitigation fees for the appropriate amount of natural and agricultural habitat as described in the SJMSCP. Details of the mitigation fee and acreage amounts shall be determined in consultation with the SJCOG, but will generally include payment of fees to the SJMSCP to compensate for loss of Agriculture and Natural habitat at a 1:1 ratio.*

5.4-4 The proposed project could result in the loss and disturbance of trees protected by the City of Manteca's ordinances.

Implementation of the project would result in the removal of mature native and/or non-native trees that are protected under the Manteca Municipal Code (17.19.060). Protected trees include all trees at least six inches in trunk diameter measured 4.5 feet above the ground. A number of trees that likely qualify as protected trees were observed on the project site. A tree survey by a qualified arborist would be required to enumerate and evaluate all trees on the project site that meet the standards in the applicable Manteca Municipal Code. Removal of protected trees would be a ***significant impact***.

Mitigation Measure

Implementation of the following mitigation measure would reduce the impact to a ***less-than-significant level***.

5.4-4 *Prior to the issuance of a grading permit, a tree survey shall be conducted by a qualified arborist to enumerate and evaluate all trees on the proposed project site that meet the standards in the applicable Manteca Municipal Code.*

Trees that are subject to protection but are proposed to be removed as a result of project implementation shall be replaced in accordance with tree planting specifications established by the Manteca Municipal Code (17.19.060). The project applicant shall meet the replacement guidelines outlined in the City's tree ordinance. Replacement trees shall be planted on-site at a location in the general vicinity that is agreeable to the City and shall be monitored in accordance with monitoring protocols agreed to by the City.

If monitoring indicates that replacement plantings are not meeting performance standards, remedial measures, determined in coordination with the City, shall be implemented.

5.4-5 The proposed project would be consistent with the mitigation requirements of the San Joaquin Multi-Species Habitat Conservation and Open Space Plan.

One of the goals of the SJMSCP is to preserve and manage large contiguous tracts of habitat for special-status plant and wildlife species in the region, while concurrently protecting other native plant and wildlife species not specifically covered by the SJMSCP through preservation of that habitat. Protection of contiguous tracts of natural habitat is important in maintaining biological diversity in the region as the larger contiguous tracts are capable of supporting both greater numbers and a greater diversity of plant and wildlife species. Additionally, this allows for the natural movement of wildlife

through the area for migration and dispersal to other areas of suitable habitat, and provides a buffering effect to those species that live there as they are less vulnerable to disturbances related to adjacent urban areas. Non-contiguous parcels are considered less valuable because they do not allow movement of wildlife through the area, and do not support either the number or diversity of plant or wildlife species that are capable of being supported in large interconnected habitat areas. Species that occur in small, isolated areas are also highly vulnerable to urban-related disturbances, such as vehicle casualties, pollution, ambient light and noise, and harassment from local residents or their pets. The project site represents a relatively small area of habitat that is isolated from other areas of natural habitat by urban and agricultural development. The habitat present in the project site is highly disturbed and is not capable of supporting the diversity of species that are present in less disturbed habitats in the region. The project site is designated and zoned for future development, and the loss of habitat at this location was assumed in the SJMSCP.

Participation in the SJMSCP is not strictly required (i.e., the project applicant could apply for natural resources permits independently). However, incidental take permitting directly through the resource agencies (USFWS, CDFG) may not be as advantageous as participation in the SJMSCP. Because the SJMSCP was developed in consultation with the resource agencies, and because the jurisdictions within the SJMSCP area have already negotiated take permits with these agencies, the USFWS and CDFG may not be receptive or cooperative to non-HCP-compliant projects that fall within the SJMSCP boundaries whose permit applicants choose not to participate in the SJMSCP. In such cases, the permitting process could take much longer than participation in the SJMSCP. Projects that are not permitted through the SJMSCP would also be vulnerable to litigation from environmental groups participating in the SJMSCP. In addition, due to levels of demand for mitigation land, mitigation credits for a given species/resource may not be available, causing further delays until other options are established.

As described in Impact 5.4-1 through 5.4-4 above, the project applicant can participate through the SJMSCP to mitigate for the loss of foraging habit for special-status species that use the project site, which would replace the loss of a low-quality, isolated habitat parcel with much higher quality habitat at another location contiguous with other natural areas.

Because the proposed project does not support substantial high-quality habitat and because the project site is assumed for eventual development in the Manteca General Plan, the proposed project would not conflict with the goals of the SJMSCP; however, this is a ***potentially significant impact*** and to ensure compliance with the SJMSCP, implementation of Mitigation Measures 5.4-1 through 5.4-4 is required.

Mitigation Measure

Implementation of the following mitigation measure would reduce the impact to a ***less-than-significant level.***

5.4-5 *Implement Mitigation Measures 5.4-1 through 5.4-4.*

Cumulative Impacts and Mitigation Measures

The cumulative context for the biological resources analysis for the proposed project is the cities of Lathrop Manteca, Ripon, and the project site, which is within the City of Manteca's sphere of influence. As development in the cities of Lathrop, Manteca, and Ripon and in the San Joaquin County region continues, habitat for plant and wildlife species native to the region is lost through conversion to urban development. Although more mobile species may be able to survive these changes in their environment by moving to new areas, less mobile species would simply be extirpated. With continued conversion of natural habitat to human use, the availability and accessibility of remaining foraging and natural habitats in this ecosystem would dwindle and those remaining natural areas would not be able to support additional plant or animal populations above their current carrying capacities through increased competition for resources, displacement, and development-induced introduction of non-native species. The conversion of plant and wildlife habitat on a regional level would, therefore, result in a *cumulatively significant impact* on biological resources.

The project site supports agricultural land, which provides suitable foraging habitat for Swainson's hawk and other raptors; some potential raptor nesting trees were observed. As discussed in project Impacts 5.4-1 through 5.4-6, construction of the proposed project could result in the loss or degradation of special status species and their habitat, and loss of foraging and nesting habitat for Swainson's hawk and other raptors. Construction of the proposed project, in combination with other development projects in the region, could therefore contribute to a fragmentation and loss of regional biodiversity through the incremental conversion of foraging habitat for special-status species to human use, and thus limit the availability and accessibility of remaining natural habitats to regional wildlife. However, plant and wildlife habitat in the project site is highly disturbed and of generally low quality, and supports only those special-status species that are fairly widespread in the region. Therefore, because the project site represents relatively low habitat value and consists of habitat types that are wide spread in the region, the proposed project's contribution to the loss of plant and wildlife habitat in the region would be less than considerable. In addition, the project could participate in the SJMSCP, which is intended to address cumulative impacts in the County, thereby offsetting potential cumulative effects on special status species and their habitat. This would be a *less-than-significant* cumulative impact.

5.5 CULTURAL RESOURCES

5.5 CULTURAL RESOURCES

INTRODUCTION

This section of the EIR assesses potential adverse impacts on cultural resources that could result from the Austin Road Business Park and Residential Community (ARBPRC) project. Cultural resources are defined as buildings, sites, districts, structures, or objects having historical, architectural, archaeological, or cultural importance. This section briefly describes the cultural setting of the project area, discusses known cultural resources within the project area, and identifies the cultural resource sensitivity of the project site. Applicable state, federal, and local regulations are identified, followed by the impact analysis and, where applicable, mitigation measures that reduce adverse impacts on cultural resources to less-than-significant levels.

This section of the EIR is based primarily on the report titled *Cultural Resources Survey and Evaluation Report for the Austin Road Business Park and Residential Community Project* (2009).[1]

Potential effects to paleontological resources that could result from the proposed project are addressed in the Initial Study included as Appendix A of this EIR and are not discussed further in this section.

No comments concerning cultural resources were raised in response to the Notice of Preparation (see Appendix B).

ENVIRONMENTAL SETTING

Prehistory

Although archaeological research in the Central Valley began over 100 years ago, very little is known about prehistoric human use of the project area. Decades of archaeological research have culminated in the three-horizon sequence for the Central Valley described in brief below.

The Early Horizon (4950 – 2950 before present (B.P.)) is characterized by a high percentage of burials with grave goods, large projectile points, and well-fashioned charmstones. Hunting was the main focus of subsistence-related activities.

During the Middle Horizon (2950 – 1450 B.P.) prehistoric populations are estimated to have been larger than they were in the Early Horizon, and settlements were more numerous. Salmon fishing and acorn harvesting, which were minor components earlier in time, became important facets of the

1 PBS&J. 2009. *Cultural Resources Survey and Evaluation Report for the Austin Road Business Park and Residential Community Project*. November. Prepared for the City of Manteca. Report on file with the City of Manteca Community Development Department.

subsistence pattern. The number of milling tools increased and more specialized fishing and hunting equipment appear in the archaeological record, implying a diversification of the resource-base.

Late Horizon (1450 B.P. – historic times) occupations were in large, sedentary settlements spread along the lower San Joaquin and Sacramento Rivers, along the lower river valleys east of the Delta, and in the Delta itself. Populations again grew during this time period, and settlements were larger, denser, and more numerous than during earlier times.

Ethnography

The project area lies within the ethnographic territory of the Yokuts people. The Yokuts held portions of the San Joaquin Valley from the Tehachapis in the south to Stockton in the north. They were bordered on the north by the Plains Miwok, on the west by the Saclan or Bay Miwok and Costonoan peoples. The Yokuts living in the project area at the time of contact with the Spanish in the late eighteenth century were members of the Chulamni tribelet.

Historic Setting

Euro-American use of the project area likely began in or about 1832, when French-Canadian trappers established a base in the town of French Camp, located north of Manteca, just south of Stockton. The area that was known as the "sand plains" remained sparsely populated until the late nineteenth century. In 1862 Joshua Cowell moved to the area that is now Manteca. Regarded as the "Father of Manteca," Cowell introduced farming and dairying to the area. Cowell constructed many of the earliest buildings in the town. Other pioneers included Peter and Noah Clapp, and David, Edward, and Eldridge Reynolds. Soon the town became known as a supply center for the county.

The construction of an irrigation system during the early 1900s dramatically increased the community's agricultural output. Instead of farming dry grains, farmers could grow a variety of crops (including alfalfa), plant orchards, or switch to large-scale dairy operations. As crops changed and diversified, large grain farms were divided into smaller plots, which resulted in an increase in population and growth. The project site has been used mainly for agricultural production since the late nineteenth century. Existing residential and farm-related buildings and structures on the project site date back as far as the early twentieth century.

CULTURAL RESOURCES

Records Search

PBS&J conducted a records search at the Central California Information Center (CCIC) in January, 2008. The records search included a review of the National Register of Historic Places (NRHP), the California Historic Resources Inventory, California Historical Landmarks, California Points of Historical Interest listing, the Historic Property Data File, the Archaeological Determinations of Eligibility, the California Department of Transportation State and Local Bridge Survey, 1907 General Land Office (GLO) plat, and Historic Spots in California (1990).

The records search indicated that the project site has been subjected to limited archaeological study. In 1993 the Institute for Archaeological Research conducted an archaeological sensitivity study for the South Manteca Area Plan, which included the northern portion of the project site. The study consisted of archival research, a CCIC records search, and limited field inspection of areas researchers believed were likely to contain cultural resources. The researchers identified the western portion of the project site as sensitive for prehistoric sites and other locations as sensitive for historic resources, including Woodward Avenue, the northern boundary of the present project site.

In 2000 Far Western Anthropological Research Group, Inc. (FWARG) conducted a survey along the Union Pacific Railroad (UPRR), which extends along the eastern edge of the project site, for a fiber optics project (Nelson 2000). The survey corridor extended 50 feet on either side of the railroad tracks. No cultural resources were encountered within the survey corridor near the project site.

In 2004 Applied Earthworks (AE) conducted cultural resource investigations in the project area for the South San Joaquin Irrigation District. No prehistoric or historic-era archaeological deposits were identified during the survey. Six historical residences were identified, two of which were recommended as eligible for inclusion in the California Register of Historical Resources (CRHR). One historic residential property was recorded just outside of the project area. Built in the 1950s, the property includes a single-family dwelling and garage built of concrete block. AE determined that the property had limited architectural and historical significance and it was recommended as not eligible for inclusion in the CRHR.

In 2006 SWCA Consultants surveyed the UPRR corridor a second time for the Qwest network construction project. No prehistoric or historic resources were recorded within the project area.

In 1995 JRP Historical Consulting evaluated the UPRR mainline route for the Mojave Pipeline Northward Expansion Project. Built in the 1870s, the railroad played an important role in the history of transportation and in the development of towns and agriculture in the Central Valley. JRP determined that the UPRR tracks did not retain sufficient integrity to hold significance and recommended the mainline as ineligible for listing on the NRHP.

An 1854 GLO Plat map shows several roads that pass through the project site. A short road or trail segment is also shown within the project site. No evidence of these historic-era roads or trails was encountered during the 2008 pedestrian survey conducted by PBS&J.

Native American Consultation

PBS&J requested a search of the Native American Heritage Commission (NAHC) sacred lands database to determine if any Native American cultural resources are present on or in the vicinity of the proposed project site. The NAHC response letter stated that the sacred lands database failed to indicate the presence of Native American resources in the immediate project area. The NAHC letter included a list of Native American organizations and individuals who may have knowledge of cultural resources in the project area. The NAHC identified one Native American contact, Ms. Katherine Perez, Chairperson of the Northern Valley Yokut Tribe. As requested by the NAHC, a letter that

included a brief description of the project and a project map were sent to Ms. Perez. The NAHC also requests that follow-up phone calls be made to the Native Americans if no response is given. As of the publication of this document, there has been no response.

Field Surveys

Archaeological Survey

PBS&J archaeologists conducted a pedestrian survey of the project site over seven days: February 14, 15, and 28, March 1, 27, and 28, and May 20, 2008. The archaeologists walked a series of parallel transects spaced 25 meters apart. When a cultural resource was identified, the archaeologists would inspect the area for associated artifacts and features. The resource was given a unique identifier, referenced with Universal Transverse Mercator coordinates (UTM; 1983 North American Datum) using a Global Positioning System handheld unit with sub-meter accuracy. If the resource was determined to be an archaeological site or an historic-era resource, it was recorded on the appropriate California Department of Parks and Recreation form, and digital photographs of the resource were taken. For the purpose of the survey, a prehistoric archaeological site was defined as consisting of more than ten flakes or three different types of artifacts (e.g., one ground stone tool, one flaked stone tool, and one piece of debitage) within a five-meter area. If there were fewer than ten flakes or three different types of artifacts, it was considered an isolated find. For each isolated find, UTM coordinates and a brief description of the resource was taken.

Built Environment Survey

PBS&J's architectural historian performed a survey of the built environment on the project site on August 4, 2009. All of the parcels containing buildings, where owner permission to enter was granted, were surveyed and photographs were taken of the exterior of the buildings. For those properties where access was not available, the City of Manteca provided photographs for use in evaluating the buildings.

Archaeological Resources

Archaeological resources recorded on the project site during investigation for the proposed project are described and evaluated for significance below. Each resource is assigned a unique identifier: Austin Road (AR), a number, and resource type. Since each resource recorded on the project-site is from the historic era, each resource is given an "H" identifier for resource type.

AR1H

This resource consists of a historic-era refuse scatter. It is located along the northern edge of the project site, five meters south of the UPRR right of way. Modern debris is also present in a recent burn pile. The site is approximately 60 feet in diameter. The area has been recently disturbed by mechanical excavation. Along the western edge of the site excavated soils have been pushed into a berm three feet high and 24 feet long. All of the historic artifacts observed during site recordation are located within the excavated area.

Historic artifacts include ceramics, brick, amethyst sun-colored glass, and a historic-era soda bottle. The historic era soda glass is embossed with "National Soda Works-Stockton, Cal." The National Soda Works Company in Stockton began manufacture in 1885 (Tinkham 1923); when this company ended manufacture is unknown. Other artifacts present include metal straps, bailing wire, metal hoops, sequined and beaded decals, and a Christmas tree brooch with rhinestones and a simple catch clasp.

The artifacts indicate both domestic and agricultural use of the area, but no structural remains are present. Neither a 1952 USGS 15-minute map of the area nor a GLO Plat dated 1854 show any structures in the vicinity of the site. Given the variety of artifact types, the sparse nature of the debris scatter, and the lack of any structural remains, it appears the area was used as a dumping ground. AR1H is recommended as not eligible for listing on the NRHP or CRHR.

AR2H

This resource consists of an irrigation system along a graded dirt road between two vineyards. The system consists of six irrigation outlets placed in a row approximately 500 feet long running east to west. Each outlet consists of a concrete box, concrete base, a metal pipe, an outlet valve, and a pressure release valve. Wooden boards with concrete residue indicate that the concrete boxes were constructed on-site. The metal outlet valves are placed near the back of the concrete boxes; a lynch pin is used to secure the valve in place. The metal pipe attached to the valve extends for an unknown depth below the surface. A pressure release pipe is at the eastern and western ends of the irrigation system. Both are made of finer grade cement than the boxes. Two of the boxes were inscribed; one with the letters "H. M. Hat" and the other with the letters "2-21-53." The former inscription is assumed to be the person who built the irrigation system; the latter is probably the date of construction, making the irrigation system approximately 57 years old. A local landowner has stated that the individual who constructed the irrigation system also planted the row of palms (AR3H). Although resource AR2H does retain its integrity, it is a common irrigation system. It does not meet the eligibility criteria for listing in the NRHP or CRHR.

AR3H

The resource consists of a double-row of palm trees running east to west with an asphalt road between the two rows. The eastern end of the palm row is adjacent to Austin Road and extends to near SR 99; the resource is approximately 4,200 feet in length with approximately 210 palm trees in the row. The tallest trees in the palm row are approximately 60 feet in height. The palm row also includes several younger, shorter trees, some approximately only 12 feet in height. The asphalt road appears to be of modern construction and has several repairs. Based on information provided by two local land-owners interviewed during the course of the surveys, resource AR3H is between 60 and 90 years in age and was planted by the Hat family.

Resource AR3H no longer retains integrity of setting. The structures to which it once led are no longer extant and have been replaced by a number of recently constructed buildings. Palm rows are

common throughout the central valley of California. AR3H is recommended as not eligible for listing on the NRHP or CRHR.

AR4H

The resource consists of an irrigation system with two irrigation outlets, which are part of a larger network that is extensive around the surrounding agricultural fields. Each outlet consists of a cement frame in the shape of an arch "door-frame" lying on the ground, the open end towards the adjacent agricultural field, and a metal screw-valve. Much of the structure appears to be buried in sand. Cement and metal debris is also present. The system is not currently in use. As with AR2H, resource AR4H is an irrigation system that is common to the region. Although it does retain some integrity, it does not meet the eligibility criteria for listing in the NRHP or CRHR.

AR5H

AR5H consists of a row of olive trees. The resource, which contains a total of 36 trees, is located along the western side of Austin Road with the southern end of the resource located just north of Palm Road. The largest of the trees has an approximately 2'6" diameter at its base and some of the trees appear to have sprouted after having been cut. Although resources of this type often lined pathways leading to residences, historic maps and GLO plats of the area do not indicate the presence of any historic-age structures in the area. Background research conducted at the CCIC failed to provide any information regarding this portion of the project site, such as previously recorded site, information regarding important persons or events in the area, or the presence of historic-age structures in the area. The resource thus has no context and no integrity of setting. Further, based on background research conducted at the CCIC and review of historical documents by PBS&J historians and archaeologists, the resource does not meet the eligibility criteria for listing on the NRHP or CRHR.

Isolated Finds

Five isolated finds were discovered during the survey. Isolate IAR-1 is a single granitic handstone. It is located in an almond orchard near the western boundary of the project site. Isolate IAR-2H consists of two pieces of amethyst glass that were found nine feet apart. The shards are located in the northeast portion of the project site, on the south side of a graded dirt road. Each piece measures approximately ½ inch in diameter. Isolate IAR-3H is a single piece of amethyst glass located in a vineyard in the southeastern portion of the project area. The piece measures approximately ¼ inch in diameter. Isolate IAR-4H is a complete Anchor Hocking pill bottle located in the northeast portion of the project site, an area with copious amounts of modern debris. Isolate IAR-5H is a milk-white glass fragment located ninety feet from IAR-4H. Most likely from a vase, the piece measures 2 inches in diameter and displays an octagonal pattern with a geometrical "zig-zag" incised design. None of the isolated finds are recommended as eligible for listing on the NRHP or CRHR.

Buildings and Structures

The following paragraphs describe the built environment of the project site with regard to potential eligibility as historical resources pursuant to CEQA. Discussions of buildings and structures not of historic-age (i.e., 45 years old or older) are brief. Each building/complex number relates to the map number on Figure 5.5-1.

Resource 1

Resource 1 is a one-story single-family home. Records indicate that it was built in 1985. The field survey confirmed that this construction date appears accurate. Therefore, this resource is not of historic age and is recommended as not eligible for listing on the NRHP or CRHR.

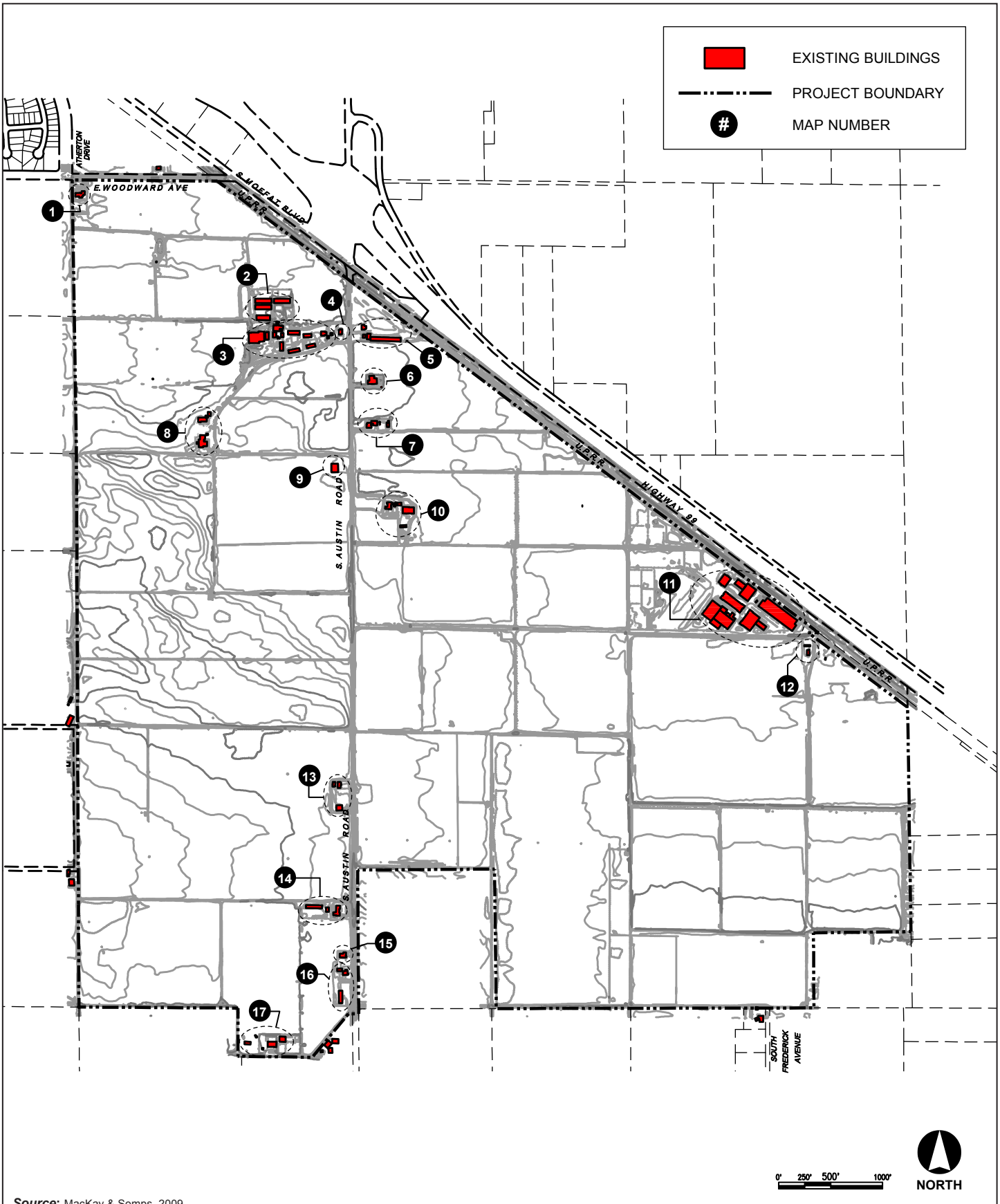
Resources 2, 3, and 4

Resources 2, 3, and 4 all appear to be part of the same farm complex. Access to the property was not granted by the property owners; therefore, all observations were made from the public right-of-way on South Austin Road, and the majority of the buildings were not clearly visible. The main residence (Resource 4) was constructed in 1937, the majority of the accessory buildings (Resource 2), were constructed in 1940, and the remaining buildings (Resource 3) were built in 1987 and 1994. The main residence and the accessory buildings are of historic age. The buildings that make up Resource 3 are not of historic age. The primary residence was constructed in 1937 in the Tudor Style, which was very popular for residential buildings during the 1920s and 1930s. Tudor elements that are present include the cross-gabled roof, stucco clad facades, tall chimney with brick detailing at the top, at least one arched doorway and window, and wood casement windows primarily grouped in sets of two with multi-pane glazing. Typical style elements not present include a steeply pitched roof, decorative half timbering, and tall narrow windows. The home is currently owned by Joseph and Lena Fassler. No information was found demonstrating the connection of any significant associations with the property at the state or local level. Resources 2, 3, and 4 are recommended as not eligible for listing on the NRHP or CRHR.

Resource 5

Resource 5 is a complex of buildings including a single-family residence and accessory buildings including barns and sheds. No construction date has been discovered; however, the house appears to have been built in the 1940s or 1950s, so it is of historic age. The accessory structures appear to be of historic age as well. The residence is a single-family home built in the common ranch style.

The home is currently owned by Joseph and Lena Fassler. No information was found demonstrating the connection of any significant associations with the property at the state or local level. Resource 5 is recommended as not eligible for listing on the NRHP or CRHR.



Source: MacKay & Somps, 2009.

FIGURE **5.5-1**

Built Environment on the Project Site

Resource 6

Resource 6 is a single family home built in 1998. Therefore, this resource is not of historic age and is not eligible for listing on the NRHP or CRHR.

Resource 7

Resource 7 is a complex of buildings including a single-family home and various farm buildings including a barn, water tower, and sheds. The house was built in 1941 and many of the accessory buildings appear to pre-date the home. The replacement of doors, windows, and a portion of the roof have compromised the integrity of the house. None of the accessory buildings possess architectural merit. No information was found demonstrating the connection of any significant associations with the property at the state or local level. Resource 7 is recommended as not eligible for listing on the NRHP or CRHR.

Resource 8

Resource 8 includes two single-family homes built in 1948. Access to the property was restricted; therefore, the assessment of the property was performed based on photographs provided by the City of Manteca. Van Dyken Farms, established in 1978, currently owns the property and grows almonds. The homes appear to be common ranch-style homes. No information was found demonstrating the connection of any significant associations with the property at the state or local level. Resource 8 is recommended as not eligible for listing on the NRHP or CRHR.

Resource 9

Resource 9 is a concrete-block warehouse built in 1981. Therefore, this resource is not of historic age and is not eligible for listing on the NRHP or CRHR.

Resource 10

Resource 10 is the Bella Napoli Winery located at 21128 South Austin Road. The property includes a single-family residence and various buildings associated with the winery. The residence was built in 1924. Apparent alterations include the replacement of several windows and a new composition shingle roof. The residential accessory buildings include a detached garage and a water tower. The residence is a simplified mission style; therefore, the few modifications have substantially degraded the physical integrity of the materials and style. No information was found demonstrating the connection of any significant associations with the property at the state or local level. Resource 10 is recommended as not eligible for listing on the NRHP or CRHR.

Resource 11

Resource 11 is a complex of modern warehouse buildings in an industrial park. None of the buildings are of historic age and none are eligible for listing on the NRHP or CRHR.

Resource 12

Resource 12 includes two structures: a mobile home and a multi-bayed, concrete-block garage owned by Albert Brocchini Farms. No construction dates were given for the structures; however, it is unlikely that either is of historic age. In addition, the mobile home is considered a temporary structure and the garage is an accessory structure with no primary building with which to relate. Resource 12 is recommended as not eligible for listing on the NRHP or CRHR.

Resource 13

Resource 13 includes a mobile home, a barn, and a shed. Assessor's records have a construction date of 1981 and this is most likely either the date the mobile home was placed on the property or the date the barn was constructed. The site survey confirmed that this construction date appears accurate; therefore, the resource is not of historic age. Resource 13 is not eligible for listing on the NRHP or CRHR.

Resource 14

Resource 14 includes a single-family home, a detached garage, a shed, and a large warehouse/storage structure. Assessor's information indicates two construction dates: 1955 and 1977. The property is currently owned by Carl and Ann Cowart. The home is an extremely simplified version of a Ranch Style home. The house is unremarkable stylistically as are the accessory buildings and no information was found demonstrating the connection of any significant associations with the property at the state or local level. Resource 14 is recommended as not eligible for listing on the NRHP or CRHR.

Resource 15

Resource 15 includes a single-family home at 22301 South Austin Road. Assessor records indicate that was it built in 1939; however, the site survey revealed that the home has been substantially modified. The property is currently owned by Christine Cowart. The stucco exterior, composition roof, windows, and garage door are not typical of late 1930s construction either in style or materials. The house is unremarkable stylistically as are the accessory buildings. No information was found demonstrating the connection of any significant associations with the property at the state or local level. Resource 15 is recommended as not eligible for listing on the NRHP or CRHR.

Resource 16

Resource 16 includes a home and various farm-related accessory buildings at 22415 South Austin Road. Assessor's records indicate that the home was built in 1948. The home is a simplified version of the Spanish Eclectic style, which was popular in California at the time. Identifying characteristics present include a low-pitched, red tile roof, stucco-clad walls, and an asymmetrical floor plan. Typical style elements not present include prominent arches above doors and windows, towers, decorative door and window surrounds, and other decorative elements such as tiles, iron sconces, vents, and chimney tops. Doors, windows and roof vents appear to be replacements.

While there are a few interesting decorative tile elements associated with the eves, overall the architectural style is unremarkable. The property is currently owned by Ignacio Sanchez. No information was found demonstrating the connection of any significant associations with the property at the state or local level. Resource 16 is recommended as not eligible for listing on the NRHP or CRHR.

Resource 17

Resource 17 is a single-family home. Assessor's records indicate that the home was built in 1998. Therefore, this resource is not of historic age and is not eligible for listing on the NRHP or CRHR.

REGULATORY SETTING

Federal, State, and local governments have developed laws and regulations designed to protect significant cultural resources that may be affected by actions that they undertake or regulate. The National Historic Preservation Act (NHPA) and CEQA are the basic federal and State laws governing the preservation of historic and archaeological resources of national, regional, State and/or local significance.

Federal Regulations

Federal regulations for cultural resources are primarily governed by Section 106 of the NHPA of 1966, which applies to actions taken by federal agencies. The goal of the Section 106 review process is to offer a measure of protection to sites that are determined eligible for listing on the NRHP. The criteria for determining NRHP eligibility are found in 36 Code of Federal Regulations (CFR) Part 60. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and affords the federal Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The Council's implementing regulations, "Protection of Historic Properties," are found in 36 CFR Part 800. The NRHP criteria (contained in 36 CFR 60.4) are used to evaluate resources when complying with NHPA Section 106. Those criteria state that eligible resources comprise districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

a) are associated with events that have made a significant contribution to the broad patterns of our history; or

b) are associated with the lives of persons significant in our past; or

c) embody the distinctive characteristics of a type, period, or method of construction, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction; or

d) have yielded or may be likely to yield, information important to history or prehistory.

Archaeological site evaluation assesses the potential of each site to meet one or more of the criteria for NRHP eligibility based upon visual surface and subsurface evidence (if available) at each site

location, information gathered during the literature and records searches, and the researcher's knowledge of and familiarity with the historic or prehistoric context associated with each site.

The American Indian Religious Freedom Act, Title 42 United States Code, Section 1996, protects Native American religious practices, ethnic heritage sites, and land uses.

State Regulations

Under CEQA, public agencies must consider the effects of their actions on both "historical resources" and "unique archaeological resources." Pursuant to Public Resources Code section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether proposed projects would have effects on "unique archaeological resources."

"Historical resource" is a term of art with a defined statutory meaning. (See Public Resources Code, section 21084.1 and CEQA Guidelines, section 15064.5, subdivisions (a) and (b).) The term embraces any resource listed in or determined to be eligible for listing in the CRHR. The CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California State Landmarks and Points of Historical Interest.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be "historical resources" for purposes of CEQA unless a preponderance of evidence indicates otherwise (Public Resources Code, section 5024.1 and California Code of Regulations, Title 14, section 4850). Unless a resource listed in a survey has been demolished, lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

In addition to assessing whether historical resources potentially impacted by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the CRHR criteria prior to making a finding as to a proposed project's impacts to historical resources (Pubic Resources Code, section 21084.1 and CEQA Guidelines, section 15064.5, subdivision (a)(3)). In general, an historical resource, under this approach, is defined as any object, building, structure, site, area, place, record, or manuscript that:

(a) Is historically or archeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and

(b) Meets any of the following criteria:

1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2) Is associated with the lives of persons important in our past;

3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4) Has yielded, or may be likely to yield, information important in prehistory or history.

(CEQA Guidelines, section 15064.5 (a)(3))

Archaeological resources can sometimes qualify as "historical resources." (CEQA Guidelines, section 15064.5 subdivision (c)(1).) In addition, Public Resources Code 5024 requires consultation with the Office of Historic Preservation when a project may impact historical resources located on State-owned land.

For historic structures, CEQA Guidelines section 15064.5, subdivision (b)(3), indicates that a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995) shall mitigate impacts to a level of less than significant. Potential eligibility also rests upon the integrity of the resource. Integrity is defined as the retention of the resource's physical identity that existed during its period of significance. Integrity is determined through considering the setting, design, workmanship, materials, location, feeling and association of the resource.

As noted above, CEQA also requires lead agencies to consider whether projects will impact "unique archaeological resources." Public Resources Code section 21083.2, subdivision (g), states that unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

(Pub. Resources Code, § 21083.2, subdivision (g).)

Treatment options under section 21083.2 include activities that preserve such resources in place in an undisturbed state. Other acceptable methods of mitigation under section 21083.2 include excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a "unique archaeological resource").

Advice on procedures to identify cultural resources, evaluate their importance and estimate potential effects is given in several agency publications such as the series produced by the Governor's Office of Planning and Research (OPR). The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities, including but not limited to, museums, historical commissions, associations and

societies, be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains and associated grave goods regardless of their antiquity and provides for the sensitive treatment and disposition of those remains.

Section 7050.5(b) of the California Health and Safety code specifies protocol when human remains are discovered. The code states:

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in section 5097.98 of the Public Resources Code.

CEQA Guidelines section 15064.5(e) requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the Native American Heritage Commission must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as timely identified by the Native American Heritage Commission. Section 15064.5 directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

As of March 1, 2005, Senate Bill 18 (Government Code sections 65352.3, 65352.4) requires that, prior to the adoption or amendment of a general plan proposed on or after March 1, 2005, a city or county must consult with Native American tribes with respect to the possible preservation of, or the mitigation of impacts to, specified Native American places, features, and objects located within that jurisdiction.

Local Regulations

City of Manteca General Plan

The following goals, policies, and implementation measures from the Resource Conservation (RC) Element of the Manteca 2023 General Plan 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.

Policies

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).

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.

RC-P-39 The City shall set as a priority the protection and enhancement of Manteca's historically and architecturally significant buildings.

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.

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.

Implementation Measures

RC-I-40 When feasible, incorporate significant archaeological sites into open space areas.

RC-I-43 All City permits for reconstruction or modification of existing buildings will require submittal of a photograph of the existing structure or site. The intent is to create a record of the buildings in the City over time. A photograph will also be required for vacant sites that will be modified with new construction of new buildings or other above ground improvements.

RC-I-46 If human remains are discovered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to their origin and disposition pursuant to Public Resource code Section 5097.98. If the Coroner determines that no investigation of the cause of death is required, and if the remains are of Native American origin, the Coroner will notify the Native American Heritage Commission, which in turn will inform a most likely descendent. The descendent will then recommend to the landowner appropriate disposition of the remains and any grave goods.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

The impact analysis for cultural resources is based on the investigation documented in the report titled *Cultural Resources Survey and Evaluation Report for the Austin Road Business Park and*

Residential Community Project (2009). The investigation included a records search of the CCIC, Native American consultation, and archaeological and built-environment surveys of the project site by PBS&J cultural resources staff meeting the Secretary of the Interior's professional qualifications standards for archaeology, architectural history, and history. Impacts are assessed in accordance with thresholds of significance based on Section V, Cultural Resources, of the Environmental Checklist Form included as Appendix G of the 2009 State CEQA Guidelines.

Standards of Significance

For the purposes of this EIR, an impact would be considered significant if the proposed project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines;
- Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 of the CEQA Guidelines; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Project-Specific Impacts and Mitigation Measures

5.5-1 The proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines.

As discussed above, the cultural resources investigation of the project site included a records search of the CCIC, Native American consultation, and archaeological and built-environment surveys of the project site. The CCIC records search identified no previously recorded historical resources on the project site. One historic residential property was recorded just outside of the project area by AE in 2004. Built in the 1950s, the property includes a single-family dwelling and garage built of concrete block. AE determined that the property had limited architectural and historical significance and it was recommended as not eligible for inclusion in the CRHR.

PBS&J's architectural historian performed a survey of the built environment on the project site on August 4, 2009. All of the parcels containing buildings, where owner permission to enter was granted, were surveyed and photographs were taken of the exterior of the buildings. For those properties where access was not available, the City of Manteca provided photographs for use in evaluating the buildings. Ten of the 17 properties surveyed were determined to be of historic age (i.e., 45 years old or older) and, therefore, required evaluation as potential historical resources as defined in section 21083.2 of the Public Resources Code and section 15064.5 of the CEQA Guidelines. The architectural historian determined that none of the historic-age buildings or structures on the project site qualified as historical resources pursuant to CEQA. Based on archival research and visual inspection, none of the properties is associated with events that have made a significant contribution to the broad patterns of the nation's or California's history and cultural heritage; none is associated with the lives of persons important in our past; none embodies the

distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or has yielded, or may be likely to yield, information important in prehistory or history.

The proposed project would include demolition of all building and structures on the project site in order to develop industrial, commercial, office, residential and public/quasi-public uses. Because none of the buildings or structures on the project site qualifies as an historical resource as defined by CEQA, the proposed project would not cause a substantial adverse change in the significance of an historical resource and there would be ***no impact***.

Mitigation Measure

None required.

5.5-2 The proposed project could cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 of the CEQA Guidelines or disturb human remains, including those interred outside of formal cemeteries.

As discussed above, the CCIC records search identified no previously recorded archaeological resources on the project site. The records search indicated that the Institute for Archaeological Research conducted an archaeological sensitivity study in 1993 for the South Manteca Area Plan, which included the northern portion of the project site. The study identified the western portion of the project site as sensitive for prehistoric sites and other locations as sensitive for historic resources, including Woodward Avenue, the northern boundary of the present project site.

PBS&J archaeologists conducted a pedestrian survey of the project site and recorded an historic-era refuse scatter (AR1H), two historic-era irrigation systems (AR2H and AR4H), a double-row of palm trees running east to west with an asphalt road between the two rows (AR3H), and a row of olive trees (AR5H). Five isolated finds were discovered during the survey, including a single granitic handstone of Native American origin, three pieces of amethyst glass, an Anchor Hocking pill bottle, a milk-white glass fragment, and an area with copious amounts of modern debris.

PBS&J determined that none of the newly recorded archaeological resources or isolated finds on the project site qualifies as a unique or significant archaeological resource pursuant to CEQA. None of the resources is associated with events that have made a significant contribution to the broad patterns of the nation's or California's history and cultural heritage; none is associated with the lives of persons important in our past; none embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or has yielded, or may be likely to yield, information important in prehistory or history.

The proposed project would include demolition of the historic-era irrigation systems and the double-row of palm trees on the project site in order to develop industrial, commercial, office, residential and public/quasi-public uses on the project site. Because none of the newly recorded archaeological resources or isolated finds on the project site qualifies as a unique or significant archaeological

resource pursuant to CEQA, there would be no impact on these resources. Nonetheless, material evidence and historical records demonstrate that the project area has been subject to intensive prehistoric and historic human use, and it is possible that previously unknown significant prehistoric and historic-era archaeological resources or human remains could be damaged or destroyed by earth-disturbing project construction activities such mass grading and excavation. Project impacts on previously undocumented significant archaeological resources or human remains are therefore considered ***potentially significant***.

Mitigation Measure

Implementation of the following mitigation measure would reduce this impact to a less-than-significant level for subsurface cultural resources that can be adequately mitigated through data recovery. With mitigation, the impact would be ***less than significant***.

5.5-2 a) *In the event that any prehistoric or historic subsurface archaeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits, animal bone, obsidian and/or mortar are discovered during construction-related earth-moving activities, all ground-disturbing activity within 100 feet of the resources shall be halted and the City of Manteca Community Development Department shall be notified. The City shall consult with a qualified archeologist retained at the applicant's expense to assess the significance of the find. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), representatives of the City and the qualified archaeologist shall meet to determine the appropriate course of action, with the City making the final decision. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report shall be prepared by the qualified archaeologist according to current professional standards.*

If the archaeologist determines that some or all of the affected property qualifies as a Native American Cultural Place, including a Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine (Public Resources Code §5097.9) or a Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the California Register of Historical Resources pursuant to Public Resources Code §5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site (Public Resources Code §5097.993), the archaeologist shall recommend to the City potentially feasible mitigation measures that would preserve the integrity of the site or minimize impacts on it, including any or a combination of the following:

- *Avoidance, preservation, and/or enhancement of all or a portion of the Native American Cultural Place as open space or habitat, with a conservation easement dedicated to the most interested and appropriate tribal organization, If such an organization is willing to accept and maintain such an easement, or alternatively, a cultural resource organization that holds conservation easements;*

- *An agreement with any such tribal or cultural resource organization to maintain the confidentiality of the location of the site so as to minimize the danger of vandalism to the site or other damage to its integrity; or*
- *Other measures, short of full or partial avoidance or preservation, intended to minimize impacts on the Native American Cultural Place consistent with land use assumptions and the proposed design and footprint of the development project for which the requested grading permit has been approved.*

  After receiving such recommendations, the City of Manteca shall assess the feasibility of the recommendations and impose the most protective mitigation feasible in light of land use assumptions and the proposed design and footprint of the development project. The City shall, in reaching conclusions with respect to these recommendations, consult with both the project applicant and the most appropriate and interested tribal organization.

b) *If human remains are discovered at any project construction sites during any phase of construction, all ground-disturbing activity within 50 feet of the remains shall be halted immediately, and the City of Manteca Community Development Department and the County coroner shall be notified immediately. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The project applicant shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. As necessary, the archaeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The City shall be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in CEQA Guidelines section 15064.5(e) and Public Resources Code section 5097.98. The project applicant shall implement approved mitigation, to be verified by the City, before the resumption of ground-disturbing activities within 50 feet of where the remains were discovered.*

Cumulative Impacts and Mitigation Measures

The cumulative context for the impacts on cultural resources would be development in San Joaquin County. Urban development that has occurred over the past several decades in San Joaquin County has resulted in the adverse impacts on innumerable significant historical and archaeological resources, and it is reasonable to assume that present and future development activities will continue to result in impacts on significant cultural resources, including historical resources, archaeological resources, and human remains. Federal, state, and local laws protect cultural resources in most instances but are not always feasible to protect cultural resources, particularly when in-place preservation would frustrate implementation of projects. For this reason, the cumulative effects of development in San Joaquin County on cultural resources are considered significant. Mitigation measures identified for the proposed project would protect any significant

archaeological resources or human remains, if present, to ensure that the project's incremental contribution to these cumulative effects would be not be cumulatively considerable.

5.6 NOISE AND VIBRATION

5.6 NOISE AND VIBRATION

INTRODUCTION

This section discusses the existing noise and vibration environment in the proposed Austin Road Business Park and Residential Community (ARBPRC) site and vicinity, and identifies potential impacts and mitigation measures related to development within the project site. Specifically, this section analyzes potential noise and vibration impacts due to and upon development of low, medium and high-density residential, mixed-use, commercial, and parks and open space uses associated with the project, relative to applicable noise and vibration criteria and to the existing ambient noise and vibration environment.

One comment letter received in response to the Notice of Preparation (see Appendix B) indicates a concern with regard to future noise levels and their potential impact on nearby schools. These issues, and others not specifically mentioned in the NOP comment letters, are addressed in this section.

Information in this section is based on traffic information provided by the traffic consultant, Fehr & Peers, the City of Manteca General Plan, the City's Municipal Code, information from various sources pertaining to any stationary construction equipment, and a survey of ambient noise levels was conducted at eight locations in the immediate project vicinity on November 3, 2008.

ENVIRONMENTAL SETTING

Fundamentals and Terminology

Sound

Sound is created when vibrating objects produce pressure variations that move rapidly outward into the surrounding air. The main characteristics of these air pressure waves are amplitude, which we experience as a sound's loudness, and frequency, which we experience as a sound's pitch. The standard unit of sound amplitude is the decibel (dB); it is a measure of the physical magnitude of the pressure variations relative to the human threshold of perception. The human ear's sensitivity to sound amplitude is frequency-dependent; it is more sensitive to sound with a frequency at or near 1,000 cycles per second than to sound with much lower or higher frequencies.

Most "real world" sounds (e.g., a dog barking, a car passing, etc.) are complex mixtures of many different frequency components. When the average amplitude of such sounds is measured with a sound level meter, it is common for the instrument to apply different adjustment factors to each of the measured sound's frequency components. These factors account for the differences in perceived loudness of each of the sound's frequency components relative to those to which the human ear is most sensitive (i.e., those at or near 1,000 cycles per second). This practice is called "A-weighting." The unit of A-weighted sound amplitude is also the decibel. However, when reporting measurements to which A-weighting has been applied, an "A" is appended to dB (i.e., dBA) to make this clear.

Noise

Noise is the term generally given to the "unwanted" aspects of intrusive sound. Many factors influence how a sound is perceived and whether or not it is considered annoying to a listener. These include the physical characteristics of a sound (e.g., amplitude, frequency, duration, etc.), but also non-acoustic factors (e.g., the acuity of a listener's hearing ability, the activity of the listener during exposure, etc.) that can influence the judgment of listeners regarding the degree of "unwantedness" of a sound.

All quantitative descriptors used to measure environmental noise exposure recognize the strong correlation between the high acoustical energy content of a sound (i.e., its loudness and duration) and the disruptive effect it is likely to have as noise. Because environmental noise fluctuates over time, most such descriptors average the sound level over the time of exposure, and some add "penalties" during the times of day when intrusive sounds would be more disruptive to listeners. The most commonly used descriptors are:

- **Equivalent Energy Noise Level** (L_{eq}) is the constant noise level that would deliver the same acoustic energy to the ear of a listener as the actual time-varying noise over the same exposure time. No "penalties" are added to any noise levels during the exposure time; L_{eq} would be the same regardless of the time of day during which the noise occurs.
- **Day-Night Average Noise Level** (L_{dn}) is a 24-hour average Leq with a 10 dBA "penalty" added to noise levels during the hours of 10:00 p.m. to 7:00 a.m. to account for increased sensitivity that people tend to have to nighttime noise. Because of this penalty, the L_{dn} would always be higher than its corresponding 24-hour L_{eq} (e.g., a constant 60 dBA noise over 24 hours would have a 60 dBA L_{eq}, but a 66.4 dBA L_{dn}).
- **Community Noise Equivalent Level** (CNEL) is an L_{dn} with an additional 5 dBA "penalty" for the evening hours between 7:00 p.m. and 10:00 p.m.
- **Minimum Noise Level** (L_{min}) the minimum instantaneous noise level experienced during a given period of time.
- **Maximum Noise Level** (L_{max}) the maximum instantaneous noise level experienced during a given period of time.

Community noise exposures are typically represented by 24-hour descriptors, such as a 24 hour L_{eq} or L_{dn}. One-hour and shorter-period descriptors are useful for characterizing noise caused by short-term activities, such as the operation of construction equipment.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night, or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings that can provide noise levels as low as 20 dBA and quiet, suburban, residential streets that can provide noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with more noisy urban residential or residential-commercial areas (60 to 75 dBA) or

dense urban or industrial areas (65 to 80 dBA). According to the City's Noise Control Ordinance, the exterior noise level standard is 55 dBA from 7:00 a.m. to 10:00 p.m., and 50 dBA from 10:00 p.m. to 7:00 a.m. The interior noise level standard is 55 dBA from 7:00 a.m. to 10:00 p.m., and 45 dBA from 10:00 p.m. to 7:00 a.m. Standards for impact noise, simple tone noise, speech, music, and any other combination are 5 dBA lower than the above standards, and noise levels exceeding these standards are limited to relatively shorter periods of time. Table 5.6-1 lists representative environmental noise levels.

TABLE 5.6-1

TYPICAL A-WEIGHTED SOUND LEVELS OF COMMON NOISE SOURCES

Decibels	Description
130	Threshold of pain
120	Jet aircraft take-off at 100 feet
110	Riveting machine at operators position
100	Shotgun at 200 feet
90	Bulldozer at 50 feet
80	Diesel locomotive at 300 feet
70	Commercial jet aircraft interior during flight
60	Normal conversation speech at 5 - 10 feet
50	Open office background level
40	Background level within a residence
30	Soft whisper at 2 feet
20	Interior of recording studio

Source: California Department of Transportation, Noise, Air Quality, and Hazardous Waste Management Office, *Technical Noise Supplement*, October 1998, p. 18.

When evaluating changes in 24-hour community noise levels, a difference of 3 dBA is a barely perceptible increase to most people. A 5 dBA increase is readily noticeable, while a difference of 10 dBA would be perceived as a doubling of loudness. In general, the higher the L_{dn} in a residential area, the greater the proportion of residents who report themselves "highly annoyed" with their noise exposure; and for a set increase in L_{dn}, the proportion of residents in the "highly annoyed" category increases faster at a higher L_{dn} than at a lower L_{dn}.[1]

Noise levels from a particular source decline as distance to a receptor increases. The weather and even the makeup of intervening terrain can also help intensify or reduce noise levels at any given location. A commonly-used rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically "hard" locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically "soft" locations (i.e., the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels may also be reduced by intervening structures, such as a row of buildings, a solid wall, or a berm located between the receptor and the noise source. California homes built prior to 1970 generally provide an exterior-to-interior noise level reduction up to about 20 dB with closed windows. Homes built

1 Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Exposure*. May. Chapter 3 and Appendix B.

within the last 30 years generally provide an exterior-to-interior reduction up to about 30 dB with closed windows.

Groundborne Vibration

Vibrating objects in contact with the ground radiate energy. If a vibrating object is massive enough and/or close enough to an observer, its vibrations are perceptible. Vibration magnitude is measured in vibration decibels (VdB) relative to a reference level of 1 micro-inch per second, the human threshold of perception. The background vibration level in residential areas is usually 50 VdB or lower, well below the threshold of perception for humans, which is around 65 VdB. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where damage can occur in fragile buildings. Common vibration sources and the human and structural response to ground-borne vibration are illustrated in Table 5.6-2.

TABLE 5.6-2

TYPICAL SOURCES AND RESPONSES TO GROUNDBORNE VIBRATION

Human/Structural Response	Velocity Level (dBA)	Typical Sources (50 feet from source)
Threshold, minor cosmetic damage to fragile buildings	—100—	Blasting from construction projects
	95	Bulldozers and other heavy tracked construction equipment
Difficulty with tasks such as reading a VDT screen	—90—	
	85	High speed rail, upper range
Residential annoyance, infrequent events (e.g. commuter rail)	—80—	Rapid transit, upper range
		High speed rail, typical
Residential annoyance, frequent events (e.g. rapid transit)		Bus or truck over bump
	—70—	
Limit for vibration sensitive equipment/Approximate threshold for human perception of vibration		
		Bus or truck, typical
	—60—	
	55	Typical background vibration
	—50—	

Source: California Department of Transportation, Noise, Air Quality, and Hazardous Waste Management Office, *Technical Noise Supplement*, October 1998, p. 18.

Accurate estimates of ground-borne vibration are complicated due to the many factors that influence vibration levels at potential receivers. Main factors that have significant effects on levels of ground-borne vibration are:

Geology: Soil conditions are known to have a strong influence on the levels of ground-borne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock. Experience has shown that vibration propagation is more efficient in

clay soils as well as areas with shallow bedrock. The latter condition seems to channel or concentrate the vibration energy close to the surface, resulting in ground-borne vibration problems at large distances from the source. Factors such as layering of the soil and depth to water table can also have significant effects on the propagation of ground-borne vibration.

Receiving Building: Ground-borne vibration problems occur almost exclusively inside buildings. Therefore, the characteristics of the receiving building are a key component in the evaluation of ground-borne vibration. Vibration may be perceptible to people who are outdoors, but it is very rare for outdoor vibration to cause complaints. The vibration levels inside a building depend on the vibration energy that reaches the building foundation, the coupling of the building foundation to the soil, and the propagation of the vibration through the building structure. The general guideline is that the more massive a building is, the lower its response to incident vibration energy in the ground.[2]

Existing Land Uses in the Project Vicinity

The project site is bordered to the north and east by State Route 99 (SR 99) and the Union Pacific Railroad (UPRR) and to the west and south by agricultural fields and residential structures. Existing land uses in the general project vicinity consist of suburban as well as rural residences and agricultural operations. There are several existing residences within the project site that would be removed to accommodate development. As a result, project noise impacts are not considered for these existing residences. The school nearest the project site is the Walter Woodward Elementary School, which is located at 575 Tannehill Drive, approximately one mile west of the project site.

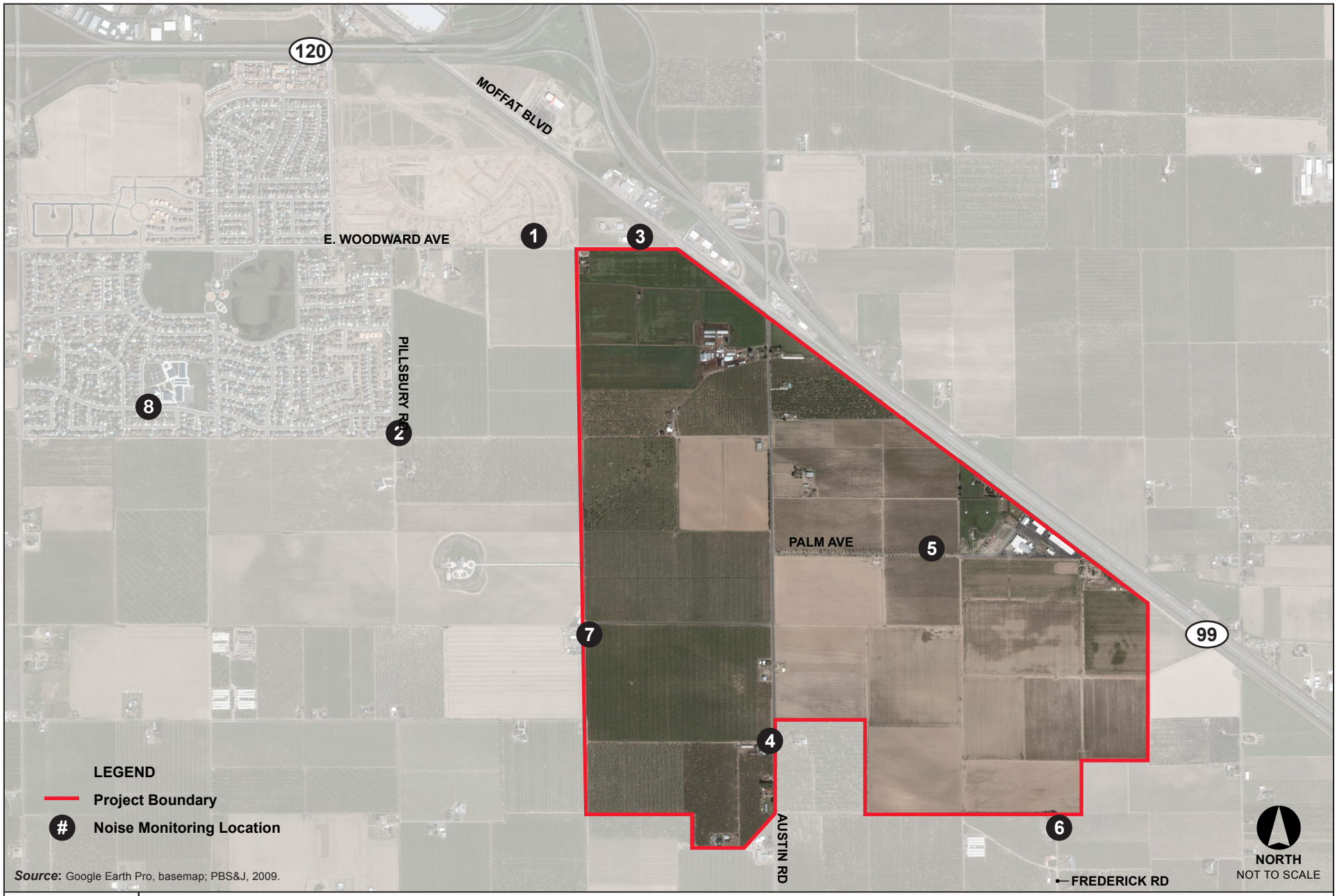
Existing Noise and Vibration Environment in the Project Vicinity

The existing ambient noise environment in the immediate project vicinity is dominated by noise from traffic on SR 99 and by railroad operations on the UPRR tracks. The only identified potentially significant source of existing vibration in the project vicinity is railroad activity on the UPRR tracks.

General Ambient Noise Environment

To generally quantify existing background noise levels in the project area, a survey of ambient noise levels was conducted at eight locations in the immediate project vicinity on November 3, 2008. The ambient noise measurement sites are shown on Figure 5.6-1. That data reflects short-term (15-minute) measurements conducted with a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter. The meters were calibrated before and after use with an LDL Model CA200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

2 U.S. Department of Transportation, Federal Railroad Administration. 2005. *High-Speed Ground Transportation Noise and Vibration Impact Assessment*, October. pp. 6-7.



Source: Google Earth Pro, basemap; PBS&J, 2009.

FIGURE **5.6-1**

Noise Monitoring Locations

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Austin Road Business Park and Residential Community

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The noise level meters were programmed to record the maximum and average noise level at each monitoring site location during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured, while the minimum measured noise level is reflected as L_{min}. The average value, denoted L_{eq}, represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period. The ambient noise level measurement results are provided in Table 5.6-3. The detailed results of the noise surveys are provided in Appendix E.

TABLE 5.6-3

AMBIENT NOISE MONITORING RESULTS IN AND AROUND THE PROJECT SITE

Site	Location	Time	Measured Noise Level (dBA)		
			Average (L_{eq})	Maximum (L_{max})	Minimum (L_{min})
1	1775 Tasca Place	9:15 a.m.	46.8	73.7	39.4
2	6645 Pillsbury Road	9:37 a.m.	44.9	61.2	39.1
3	Along Woodward (300 ft west of Moffat Boulevard intersection)	10:00 a.m.	74.5	94.9[1]	47.9
4	22233 Austin Road	10:20 a.m.	62.8	79.5	43.4
5	Along Palm Avenue (1,000 feet east of Austin Road)	10:40 a.m.	51.1	70.3	43.1
6	Terminus of Frederick Road	11:35 a.m.	44.7	67.1	41.2
7	Along Sedan Avenue (500 feet west of north-south segment of Sedan Avenue)	12:50 p.m.	56.1	68.6	39.7
8	Woodward Elementary School	1:10 p.m.	51.3	68.0	39.3

Notes:
1. Train horn at 200 feet.
Source: PBS&J, 2009.

The measured daytime noise levels are characteristic of a rural area, with noise occurring primarily along roadways with automobile traffic and noise within the existing residential developments generated primarily by landscaping operations, people talking, doors slamming, tires squealing, etc.

Roadway Noise

Existing roadway noise levels were calculated for the roadway segments in the proposed project vicinity that have noise-sensitive uses facing the roadways. Roadway noise levels were calculated using the Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108) (FHWA Model) and traffic volumes from the project traffic study. The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (energy rates) utilized in the FHWA Model) were modified to reflect average vehicle noise rates identified for California by Caltrans. The Caltrans data show that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. The average daily noise levels along these roadway segments are presented in Table 5.6-4.

TABLE 5.6-4

EXISTING TRAFFIC NOISE LEVELS AND DISTANCES TO CONTOURS

Roadway	Segment Description	Ldn @ Nearest Receptor
Austin Road	Between Moffat and Sedan Avenue*	62.7
Austin Road	Between Sedan Avenue and Ripon Road*	63.6
Austin Road	Between SR 99 NB off-ramps and Graves Road	57.5
Woodward Avenue	Between Atherton Road and Pillsbury Road	58.7
Ripon Road	Between Austin Road and Jack Tone Road	64.9
Jack Tone Road	Between SR 99 SB off-ramps and Ripon Road	63.3
Woodward Avenue	Between Van Ryn Road and Main Street	61.7
Van Ryn Road	Between Industrial Park Drive and Woodward Ave	58.8

Notes:
1. Distances to traffic noise contours are measured in feet from the centerlines of the roadways. All calculated noise levels had a receptor distance of 50 feet with the exception of Austin Road (between SR 99 NB off-ramps and Graves Road), which had a receptor distance of 75 feet.

Source: Federal Highway Administration with input from Fehr & Peers. (2009). Highway Traffic Noise Prediction Model (FHWA-RD-77-108).

Existing Vibration

The greatest regular source of ground-borne vibration in the project area and in the immediate vicinity is roadway traffic, bus traffic, and rail traffic. Trucks and buses typically generate noticeable ground-borne vibration velocity levels at the edge of the road and typically produce a vibration level of 65 VdB at a distance of 50 feet from the roadway. Trains typically generate noticeable ground-borne vibration velocity levels at the edge of the right-of-way and typically produce a vibration level of 75 VdB at a distance of 50 feet from the tracks (HMMH 2006).

REGULATORY SETTING

Federal

The U.S. Department of Housing and Urban Development (HUD) has set a goal of 45 dBA L_{dn} as a desirable maximum interior standard for residential units developed under HUD funding. While HUD does not specify acceptable exterior noise levels, residential dwellings constructed under Title 24 of the California Code of Regulations typically provide 20 dBA of acoustical attenuation with the windows closed and 10 dBA with the windows open. Based on this assumption, it is reasonable to assume that, under HUD standards, the exterior L_{dn} or CNEL should not exceed 65 dBA under normal conditions.

State

The California Department of Health Services (DHS) Office of Noise Control has previously studied the correlation of noise levels and their effects on various land uses (DHS no longer exists).

Vibration Standards

As noted above, the City of Manteca noise ordinance establishes limits for groundborne vibration. Under the ordinance, perceivable vibration that is transmitted through the ground and is discernible without the aid of instruments is not permitted, except within areas zoned M-1 or M-2.

The most current guidelines prepared by the State noise officer were issued in 1987. They are contained in the "General Plan Guidelines" issued by the Governor's Office of Planning and Research in 1998. Noise-compatible land use planning depends on the ability to locate noise-sensitive land uses in an acceptable environment. Exterior noise environments are "normally acceptable" for schools and residences if they are below 60 dBA L_{dn} (or CNEL) and "conditionally acceptable" below 70 dBA L_{dn} (or CNEL). A "conditionally acceptable" designation implies that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements and after necessary noise insulation features are incorporated into the design of the new land use. By comparison, a "normally acceptable" designation indicates that standard construction can occur without special noise reduction requirements.

The types of land uses addressed by the State standards and the acceptable noise categories for each are presented in Table 5.6-5 (Land Use Compatibility for Community Noise Sources). There is some overlap between the categories, indicating the importance of judgment required when determining the applicability of the numbers in certain situations.

Title 24 of the California Code of Regulations requires performing acoustical studies before constructing dwelling units in areas that exceed 60 dBA L_{dn}. In addition, the California Noise Insulation Standards identify an interior noise standard of 45 dBA CNEL for new multi-family residential units.

Local

City of Manteca General Plan

The City of Manteca General Plan establishes allowable noise exposures and performance standards for uses within the City, which are generally consistent with the land use compatibility guidelines discussed above. The City's General Plan noise standards are shown in Table 5.6-6. Table 5.6-7 identifies noise standards for stationary sources within the City.

In addition, the following goals and policies are contained in the City of Manteca General Plan Noise Element and are relevant to the proposed project.

Policies

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 [reproduced in this Draft EIR in Table 5.6-6] shall be designated as noise-impact areas.
N-P-2	New development or 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 [reproduced in this Draft EIR in Table 5.6-6].
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 [reproduced in this Draft EIR in Table 5.6-6]. Noise mitigation may be required to meet Table 9-2 performance standards.

TABLE 5.6-5

LAND USE COMPATIBILITY FOR COMMUNITY NOISE SOURCES

Land Use Category	Noise Exposure (dBA, CNEL)						
	55	60	65	70	75	80	
Residential—Low-Density Single Family, Duplex, Mobile Homes							
Residential—Multiple Family							
Transient Lodging—Motels, Hotels							
School, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Areas, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Course, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business, Commercial and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but closed windows and fresh air supply 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 needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: California Department of Health Services, Office of Noise Control.

TABLE 5.6-6

CITY OF MANTECA GENERAL PLAN MAXIMUM ALLOWABLE MOBILE-SOURCE NOISE EXPOSURE AND PERFORMANCE STANDARDS

Land Use[1]	Outdoor Activity Areas[2] (dBA CNEL/L_{dn})	Interior Spaces (dBA)	
		CNEL/L_{dn}	L_{eq}[3]
Residential	60[4]	45	--
Transient Lodging	60[4]	45	--
Hospitals, Nursing Homes	60[4]	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Music Halls	60[4]	--	40
Office Buildings	65	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks[5,6]	70	--	--

Notes:
1. 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
2. Outdoor activity areas for residential development are considered to be backyard patios or decks of single-family dwellings, and the patios, balconies, or common areas where people generally congregate for multi-family developments. Outdoor activity areas for non-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 property.
3. Determined for a typical worst-case hour during periods of use.
4. In areas where it is not possible to reduce exterior noise levels to 60 dB L_{dn} or below using practical application of the best noise-reduction technology, an exterior noise level of up to 65 L_{dn} will be allowed.

Source: City of Manteca. General Plan Noise Element, Table 9-1 and 9-2. June 2003.

TABLE 5.6-7

CITY OF MANTECA GENERAL PLAN PERFORMANCE STANDARDS FOR STATIONARY NOISE SOURCES OR PROJECT AFFECTED BY STATIONARY NOISE SOURCES[1,2]

Noise Level Descriptor	Outdoor Activity Areas	
	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly Equivalent Sound Level (L_{eq})	50	45
Maximum Sound Level (L_{max})	70	65

Notes:
1. Each of the noise level standards specific above shall be reduced by 5 dBA for simple noise tones, noises consisting primarily of speech or music, or recurring impulsive noises. Such noises are generally be considered by residents to be particularly annoying and area 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. General Plan Noise Element, Table 9-3. June 2003.

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 [reproduced in this Draft EIR in Table 5.6-6].

N-P-5 In accordance with Table 9-2 [reproduced in this Draft EIR in Table 5.6-6] standards, the City shall regulate construction-related noise impacts on adjacent uses.

Further, as part of Implementing Action N-I-3, the City considers a project to represent a substantial increase in ambient noise levels if the associated increase would be 10 dB or more. However, 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 hearing, or by correspondence; and,
- Prior CEQA determinations by other agencies specific to the project.

City of Manteca Municipal Code

The City of Manteca has also adopted a Noise Ordinance (Chapter 17.13, Section 17.13.040 of the Manteca Municipal Code), which identifies exterior noise standards, specific noise restrictions, exemptions, and variances for sources of noise within the City. Section 17.13.040 of the Municipal Code establishes exterior noise levels for various land uses, including residential, commercial, and industrial. The exterior noise standards established in the City's Noise Ordinance are identified in Table 5.6-8 (City of Manteca Noise Ordinance Exterior Noise Standards). If the ambient noise level is greater than the identified noise standards, the noise standard becomes the ambient noise level without the offending noise.

TABLE 5.6-8

CITY OF MANTECA NOISE ORDINANCE EXTERIOR NOISE STANDARDS

Receiving Land Use Category	Time Period	Maximum Exterior Noise Level (dBA)
Single and Limited Multi-Family	10 p.m. to 7 a.m.	50
	7 a.m. to 10 p.m.	60
Multi-Family Residential, Public Institutional, and Neighborhood Commercial	10 p.m. to 7 a.m.	55
	7 a.m. to 10 p.m.	60
Medium and Heavy Commercial	10 p.m. to 7 a.m.	60
	7 a.m. to 10 p.m.	65
Light Industrial	Anytime	70
Heavy Industrial	Anytime	75

Notes: The following corrections are applicable (apply only one correction):
Daytime Operation Only (7 a.m. to 7 p.m.) +5 dB
Noise Source Operates Less Than:
20% of any one-hour period: +5 dB
5% of any one-hour period: +10 dB
1% of any one-hour period: +15 dB
Noise of Impulsive Character (hammering, etc.): -5 dB
Noise Rising or Falling in Pitch or Volume (hum, screech, etc.): -5 dB
Source: City of Manteca. Title 17, Zoning Ordinance. Chapter 17.13, Section 17.13.040. 1992.

Also, per the noise ordinance, no vibration shall be produced which is transmitted through the ground and is discernible without the aid of instruments at the point of measurement specified in Section 17.13.030 of Municipal Code.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

This analysis of project noise impacts focuses both on impacts on future noise-sensitive land uses within the project site, as well as noise impacts on existing noise-sensitive land uses as a result of the project. To assess noise impacts on the project from outside sources, future noise levels are evaluated at proposed noise-sensitive land uses within the project site. To assess noise impacts due to the project, changes in noise environments which would result from the project, as well as project construction noise, are assessed at existing noise-sensitive uses. Finally, the project would introduce internal roadway traffic and sources of noise related to commercial and industrial uses developed within the project boundaries. These impacts are assessed as well.

Traffic-Related Noise

To assess noise impacts due to project-related traffic increases on the local roadway network, traffic noise levels are predicted at a representative distance for both existing and future, project and no-project conditions. To describe existing and projected noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise factors for automobiles and medium and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict traffic noise levels in terms of L_{dn}, it is necessary to adjust the input volume to account for the day/night distribution of traffic. Noise impacts are identified at existing noise-sensitive areas if the noise level increases resulting from the project would exceed the City standards previously described.

Construction Noise

Construction noise levels were estimated by data published by the U.S. Environmental Protection Agency (EPA). Potential noise levels are identified for on- and off-site locations that are sensitive to noise, including residences and schools.

The EPA has compiled data regarding the noise-generating characteristics of typical construction activities and equipment. These noise levels would diminish rapidly with distance from the construction site, at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 86 dBA measured at 50 feet from the noise source to the receptor would reduce to 80 dBA at 100 feet from the source to the receptor, and reduce by another 6 dBA to 74 dBA at 200 feet from the source to the receptor.

The daily use of construction equipment would generate different noise levels depending on the equipment used, as indicated in Table 5.6-9. Construction activities would occur during normal daytime working hours. Table 5.6-10 indicates noise levels associated with typical construction activities. Using the data provided by EPA, the anticipated noise levels during construction at existing and proposed receptors were evaluated in comparison to the City's noise standards and Municipal Code requirements.

It should be noted that the use of pile-driving equipment was not included in the evaluation of noise impacts.

TABLE 5.6-9

NOISE RANGES OF TYPICAL CONSTRUCTION EQUIPMENT

Equipment	Noise Levels in dBA L_{eq} at 50 Feet [a]
Front Loader	73 to 86
Trucks	82 to 95
Cranes (moveable)	75 to 88
Cranes (derrick)	86 to 89
Vibrator	68 to 82
Saws	72 to 82
Pneumatic Impact Equipment	83 to 88
Jackhammers	81 to 98
Pumps	68 to 72
Generators	71 to 83
Compressors	75 to 87
Concrete Mixers	75 to 88
Concrete Pumps	81 to 85
Back Hoe	73 to 95
Tractor	77 to 98
Scraper/Grader	80 to 93
Paver	85 to 88

Notes:
Machinery equipped with noise control devices or other noise-reducing design features does not generate the same level of noise emissions as that shown in this table.
Source: U.S. EPA 1971.

TABLE 5.6-10

TYPICAL OUTDOOR CONSTRUCTION NOISE LEVELS

Construction Phase	Noise Levels at 50 Feet (dBA L_{eq})	Noise Levels at 50 Feet with Standard Noise Abatement (dBA L_{eq})
Ground Clearing	84	82
Excavation, Grading	89	86
Foundations	78	77
Structural	85	83
Finishing	89	86

Source: U.S. EPA 1971.

Standards of Significance

The following thresholds are based on Appendix G of the CEQA Guidelines, as amended. For purposes of this EIR, implementation of the proposed project may have a significant adverse impact on noise if it would result in any of the following:

- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
- Expose persons to or generate excessive groundborne vibration or groundborne noise levels
- Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project

- Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project

In order to assess what would be considered excessive in terms of noise and vibration levels, the following criteria were used to determine the significance of impacts. For the purposes of this analysis, an impact would be considered significant if it would result in any of the following:

- Construction noise would exceed the thresholds indicated in the City General Plan (Table 9-2) between the hours of 7:00 p.m. and 7:00 a.m.
- Vibration levels would exceed the standards specified in the City's noise ordinance.
- Operational noise would exceed the thresholds indicated in the City General Plan (Tables 9-1 and 9-2).
- New noise-sensitive land uses would be exposed to noise exceeding 60 dBA L_{dn}.
- Future with-project traffic noise at existing noise-sensitive land uses would increase by 10 dBA or more relative to existing conditions.
- Future with-project traffic noise at existing noise-sensitive land uses would increase by 3 dBA or more relative to future no-project conditions when the future no-project noise level is 60 dBA L_{dn} or greater.

Project-Specific Impacts and Mitigation Measures

5.6-1 Construction of the proposed project could result in a substantial temporary increase in ambient noise levels experienced by existing and project-related sensitive receptors.

Development of the project site would require the use of heavy equipment for demolition, site excavation, installation of utilities, site grading, paving, and building fabrication. Construction activities would also involve the use of smaller power tools, generators, and other sources of noise. During each stage of construction there would be a different mix of equipment operating, and noise levels would vary based on the amount of equipment in operation and the location of the activity.

The EPA has compiled data regarding the noise generating characteristics of specific types of construction equipment and typical construction activities. These data were presented previously in Tables 5.6-9 and 5.6-10. These noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 86 dBA measured at 50 feet from the noise source to the receptor would reduce to 80 dBA at 100 feet from the source to the receptor, and reduce by another 6 dBA to 74 dBA at 200 feet from the source to the receptor.

Noise that would be experienced by sensitive uses due to development associated with implementation of the proposed project is determined at their property lines. While the nearest sensitive uses vary at different locations in and around the project site, there are several residential structures, including those at the terminus of Frederick Road and those immediately south of the project boundaries along Austin Road, that would be located within 50 feet of potential construction activities. Therefore, sensitive

receptors in the project vicinity and future land uses on-site could experience noise levels up to 86 dBA L_{eq} as a result of construction activities.

As noted in Chapter 2, construction activities would only occur between the hours of 7 a.m. and 7 p.m., and the City considers construction noise between these hours to be exempt from the standards established in the City's noise ordinance and the City's General Plan.[3] Therefore, construction activities would be considered consistent with the provisions of both the noise ordinance and General Plan. It should be noted that construction activities would increase noise levels above existing measured ambient noise levels (Table 5.6-3) by over 5 dBA at nearby sensitive receptors, which would be considered perceivable, but construction activities in close proximity to sensitive receptors would be periodic and finite. As such, impacts would be considered ***less than significant***.

Mitigation Measure

Although limiting hours of construction activities would not exceed standards established in the City's noise ordinance and the City's General Plan and would result in a less than significant impact, elevated noise levels would be perceptible at nearby residential structures on a temporary basis. To ensure that the level to which residences are subjected to elevated noise levels is minimized to the extent feasible, Mitigation Measures 5.6-1(a) through 5.6-1(c) would be implemented. Impacts would remain ***less than significant***.

5.6-1 a) *The project applicant shall require by contract specifications that the following construction best management practices (BMPs) be implemented by the project contractors to reduce construction noise levels:*

- *Two weeks prior to the commencement of construction, notification must be provided to surrounding land uses within 300 feet of the project site disclosing the construction schedule, including the various types of activities that would be occurring throughout the duration of the construction period;*
- *Ensure that construction equipment is properly muffled according to industry standards and be in good working condition;*
- *Implement noise attenuation measures, which may include, but are not limited to, temporary noise barriers or noise blankets around stationary construction noise sources;*
- *Use electric air compressors and similar power tools rather than diesel equipment, where feasible;*
- *Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes;*
- *Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding owners and residents to contact the job superintendent. If the City or*

3 City of Manteca. *Evans Estates – Pillsbury Estates Project Environmental Impact Report*. April 2009.

the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.

Contract specifications shall be included in the proposed project construction documents.

b) *The project applicant shall require by contract specifications that construction staging areas along with the operation of earthmoving equipment within the project area would be located as far away from vibration and noise sensitive sites as possible. Contract specifications shall be included in the proposed project construction documents.*

c) *The project applicant shall require by contract specifications that heavily loaded trucks used during construction would be routed away from residential streets to the extent feasible. Contract specifications shall be included in the proposed project construction documents.*

5.6-2 Operation of land uses associated with the proposed project could result in a substantial increase in local traffic noise levels over existing and future noise levels without the project.

The increase in traffic resulting from implementation of the proposed project would increase the ambient noise levels at sensitive off-site locations in the project vicinity. Table 5.6-11 (Traffic Noise Impacts with Project Compared to Existing Conditions) identifies the changes in future noise levels along select roadway segments in the project vicinity. As discussed previously, a difference of 10.0 dBA between existing and future with-project 24-hour noise levels (L_{dn}) is considered a substantial increase in noise, per the City's General Plan. In addition and as stated in the Thresholds of Significance, a 3.0 dBA L_{dn} increase is considered substantial if the noise increase associated with a project over future no-project conditions would meet or exceed the City's 60 dBA L_{dn} noise level standard. Existing traffic noise levels are identified in Table 5.6-4. Noise levels associated with traffic generated from existing conditions with the proposed project are calculated at the selected locations along the study-area roadway segments within the City using traffic data from the traffic study (included in Appendix G).

As shown in Table 5.6-11 (Future Noise Levels Associated with the Proposed Project), the following five roadway segments within and in the vicinity of the project site would exceed the 3.0 dBA L_{dn} increase under existing plus project conditions and one roadway segment under 2025 conditions with implementation of the proposed project.

- Austin Road between Moffat and Sedan Avenue
- Austin Road between SR 99 NB off-ramps and Graves Road
- Woodward Avenue between Atherton Road and Pillsbury Road
- Ripon Road between Austin Road and Jack Tone Road
- Woodward Avenue between Van Ryn Road and Main Street

These increases would constitute a substantial permanent increase in ambient noise levels due to implementation of the proposed project. As such, impacts would be considered ***potentially significant***.

TABLE 5.6-11

FUTURE NOISE LEVELS ASSOCIATED WITH THE PROPOSED PROJECT

Roadway Segment	Noise Levels in dBA L_{dn} at nearest sensitive receptor[1]				
	No Project	With Project	Increase	Significance Threshold	Exceeds Significance Threshold?
Existing Conditions					
Austin Road between Moffat and Sedan Avenue[2]	62.7	69.2	6.5	3	**Yes**
Austin Road between Sedan Avenue and Ripon Road*	63.6	66.4	2.8	3	No
Austin Road between SR 99 NB off-ramps and Graves Road	57.5	61.7	4.2	3	**Yes**
Woodward Avenue between Atherton Road and Pillsbury Road	58.7	65.8	7.1	3	**Yes**
Ripon Road between Austin Road and Jack Tone Road	64.9	69.4	4.5	3	**Yes**
Jack Tone Road between SR 99 SB off-ramps and Ripon Road	63.3	64.6	1.3	3	No
Woodward Avenue between Van Ryn Road and Main Street	61.7	66.3	4.6	3	**Yes**
Van Ryn Road between Industrial Park Drive and Woodward Avenue	58.8	61.6	2.8	3	No
Future (2025) Conditions					
Austin Road between Moffat and Sedan Avenue	65.5	68.7	4.8	3	**Yes**
Austin Road between Sedan Avenue and Ripon Road	66.0	65.3	-0.7	3	No
Austin Road between SR 99 NB off-ramps and Graves Road	60.2	61.2	1.0	3	No
Woodward Avenue between Atherton Road and Pillsbury Road	65.0	67.6	2.6	3	No
Ripon Road between Austin Road and Jack Tone Road	67.2	69.6	2.4	3	No
Jack Tone Road between SR 99 SB off-ramps and Ripon Road	64.8	65.8	1.0	3	No
Woodward Avenue between Van Ryn Road and Main Street	67.4	68.9	1.5	3	No
Van Ryn Road between Industrial Park Drive and Woodward Avenue	63.8	64.2	0.4	3	No

Notes:
1. Nearest receptor assumed to be 50 feet, with the exception of Austin Road between SR 99 NB off-ramps and Graves Road, which was assumed to be 75 feet.
2. Under the proposed project, Austin Road, south of SR 99 would have a posted speed limit of 35 mph.

Source: PBS&J, 2009 (calculation data and results are provided in Appendix G).

Mitigation Measures

Mitigation measures identified in Section 5.9, Transportation and Circulation would serve to improve traffic flow and reduce speeds, which would reduce roadway noise levels, but not to a level below significant. As no additional feasible mitigation measures are available to reduce exterior noise levels resulting from increased traffic, this impact would remain ***significant and unavoidable***.

None available.

5.6-3 Operation of land uses associated with the proposed project could result in a substantial increase in ambient noise levels associated with the operation of stationary noise sources.

Sources of noise generated by implementation of the proposed project would include new stationary sources (such as rooftop heating, ventilation, and air conditioning [HVAC] systems for the commercial, residential, and industrial uses). The proposed project would also introduce new activity and noise to the area as residences are included and people are attracted to the new mix of uses that would develop as part of the proposed project. As shown in Table 5.6-3, noise monitoring on the project site indicates that existing noise levels on site do not currently exceed the 60 dBA "desirable maximum" exterior noise standard for residential uses. Depending on the type and scale of industrial uses developed at the project site, additional stationary source noises associated with the operation of those uses could occur. However, any new development at the project site would be subject to design review by the City and the requirements of the Zoning Code (Section 17.05.020) with respect to maximum allowable noises at nearby sensitive receptors.

With respect to HVAC, the HVAC systems that would be installed for the new structures associated with the proposed project can result in noise levels that average between 50 and 65 dBA L_{eq} at 50 feet from the equipment. As 24-hour L_{dn} noise levels are approximately 7 dBA greater than 24-hour L_{eq} measurements, this means that the HVAC equipment associated with the retail-commercial buildings could generate community noise levels that average between 57 to 72 dBA L_{dn} at 50 feet when the equipment is operating constantly over 24 hours. These HVAC units would likely be mounted on the rooftops of the proposed buildings and would be screened from view by building features. Nonetheless, the potential noise impact associated with the operation of stationary noise sources attributable to the proposed project would be considered ***potentially significant***.

Mitigation Measures

Implementation of Mitigation Measure 5.6-3 would require the installation of acoustic shielding around stationary equipment in the vicinity of residential structures. The shielding installed around these systems would typically reduce noise levels by approximately 15 dBA, which could reduce HVAC system noise to approximately 50 dBA L_{eq} at 50 feet from the equipment, which would be approximately 57 dBA L_{dn}. Implementation of Mitigation Measure 5.6-3 would ensure that impacts related to the HVAC systems would remain below the 60 dBA L_{dn} exterior noise level guideline established in the City's General Plan for residential uses. As such, impacts to residents of the proposed project and around the project site relating to stationary sources would be ***less than significant***.

5.6-3 *The developer shall provide proper shielding for all new HVAC systems used by the proposed high-density residential and mixed use buildings to achieve an attenuation of 15 dBA at 50 feet from the equipment.*

5.6-4 Construction of the proposed project could result in the exposure of sensitive receptors to excessive vibration levels.

Construction-related vibration has two potential impacts. First, vibration at high enough levels can result in human annoyance. Second, groundborne vibration can potentially damage the foundations and exteriors of historic structures. Groundborne vibration that can cause this kind of damage is typically limited to impact equipment, especially pile drivers. Construction activities that would occur under the proposed project have the potential to generate low levels of groundborne vibration. Table 5.6-12 identifies various vibration velocity levels for the types of construction equipment that would operate within the City during construction.

TABLE 5.6-12

VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Approximate VdB			
	25 Feet	50 Feet	75 Feet	100 Feet
Large Bulldozer	87	81	77	75
Loaded Trucks	86	80	76	74
Jackhammer	79	73	69	67
Small Bulldozer	58	52	48	46

Source: Federal Railroad Administration 1998.

Like noise, groundborne vibration will attenuate at a rate of approximately 6 VdB per doubling of distance. The groundborne vibration generated during construction activities would primarily impact existing sensitive uses (e.g., residences and schools) that are located adjacent to, or within, the vicinity of specific projects. These sensitive uses could sometimes be located as close as 50 feet to the construction site or as far as several hundred feet away. Based on the information presented in Table 5.6-12, vibration levels could reach up to 81 VdB at sensitive uses located within 50 feet of construction. For sensitive uses that are located at or within 50 feet of construction activities, sensitive receptors (e.g., residents and school children) at these locations may experience vibration levels during construction activities that exceed the FTA's vibration impact threshold of 80 VdB for human annoyance. So long as construction occurs more than 50 feet from sensitive receptors, the impact associated with groundborne vibration generated by the equipment would be below 80 VdB and thus would be less than significant. However, as specific building designs are unknown at this time, it may be possible that construction activities could occur as close as 50 feet from sensitive receptors. This would result in these sensitive receptors experiencing vibration impacts above the threshold of 80 VdB, in which case this impact would be ***potentially significant***.

Mitigation Measures

Implementation of Mitigation Measures 5.6-1(a) through 5.6-1(c) would help to reduce this impact, but not to a less-than-significant level; therefore, this impact would remain ***significant and unavoidable***.

5.6-4 *Implement Mitigation Measures 5.6-1(a) through 5.6-1(c).*

5.6-5 Operation of the proposed project could generate and expose sensitive receptors on site or off site to excessive groundborne vibration or groundborne noise levels.

During operation of the proposed project, background operational vibration levels would be expected to average around 50 VdB, as discussed previously in this section. This is substantially less than the 80 VdB threshold for receptors in the vicinity of the project site. Groundborne vibration resulting from operation of the proposed project would primarily be generated by trucks making periodic deliveries to the proposed project area. Because no substantial sources of groundborne vibration are currently anticipated as part of the proposed project, no excessive vibration levels are likely to occur during operation of the proposed project. It should also be noted that any new development at the project site would be subject to design review by the City and the requirements of the Zoning Code (Section 17.05.020) with respect to maximum allowable noises at nearby sensitive receptors. Therefore, operation of the proposed project would not expose sensitive receptors on or off site to excessive groundborne vibration or groundborne noise levels, and this impact would be ***less than significant***.

Mitigation Measures

None required.

5.6-6 Implementation of the proposed project could result in the exposure of sensitive land uses to excessive noise levels associated with the continued operation of the UPRR rail line.

Under the proposed project, additional sensitive uses (primarily residential structures) would be located in close proximity (approximately 50 feet) to the UPRR rail line. As stated previously, typical train noise produces a noise level of 80 dBA at 50 feet from the tracks. Per the Federal Railway Administration, noise levels associated with trains are anticipated to attenuate/reduce at a rate of 4.5 dBA for each doubling of distance. It should also be noted that the City standard would be adjusted to 70 dBA for exterior noise levels between the hours of 7 a.m. and 10 p.m. due to the +10 dBA correction afforded to noise sources occurring for 3 minutes or less in a given hour. Nonetheless, because the movement of trains along the UPRR tracks could occur approximately 50 feet from residential structures included as part of the proposed project, implementation of the project could expose these residential structures to noise levels in excess of City standards.

In addition, to movement noise levels, trains are required to use horns at any at-grade crossing for safety reasons, and have been recorded using horns at Woodward Road and Austin Road. As shown in Table 5.6-3, noise levels attributed to the UPRR train horn were approximately 94.9 dBA at a distance of 200 feet from the horn (which would be 103.9 dBA at 50 feet). Under the proposed project, sensitive uses, both interior and exterior, could be located within areas that may experience excessive noise levels due to train horns. West of Austin Road, potential land uses adjacent to the UPRR right-of-way would be predominantly residential structures. It should be noted that the planned residential units in close proximity to the UPRR right-of-way would be high-density and medium-density residential. As such, it is anticipated that the majority of open/exterior space would be associated with communal open spaces, such as pocket parks or pedestrian walkways. It is expected that these uses could be located

within the interior of new developments or between the residential development and the UPRR tracks, thereby mitigating the effects of noise generated by the UPRR on the proposed residential structures.

In terms of interior uses and as stated previously, under new construction practices, noise levels inside structures, such as residential buildings, can be expected to be 30 dBA less than exterior noise levels. As such, the instantaneous interior noise levels at residential units located at 50 feet from the UPRR tracks would be reduced to approximately 73.9 dBA when a train horn blows. Nonetheless, based on the standards identified in the City noise ordinance, noise levels would remain in excess of City noise standards as established in Municipal Code. As such, this impact would be considered ***potentially significant***.

Mitigation Measures

Implementation of the mitigation measures provided below, as well as Mitigation Measure 5.3-4 (see section 5.3, Air Quality), which establishes a minimum distance of 200 feet for residential structures from the northern project boundary, would reduce potential noise levels at sensitive receptors associated with interior and exterior communal and private spaces, but not to levels below the standards set in the City's Municipal Code. Although the mitigation measures would reduce impacts, they would not fully mitigate the potential impact of rail horns on those residents of the project located closest to the UPRR tracks. However, it should also be noted that in accordance with the Final Rule for the Use of Locomotive Horns at Highway-Rail Grade Crossings established by the FRA, local jurisdictions have the ability to prevent trains from using their horns at at-grade crossings through the establishment of Quiet Zones. The establishment of a Quiet Zone involves the installation of additional design features that would limit potential vehicle and pedestrian conflicts with moving trains, including four-quadrant gates, advance warning signs, mountable curb medians with channelization devices, programmed enforcement, photo enforcement, and public education and awareness. The City of Manteca may pursue the establishment of a Quiet Zone to the north of the project site; however, until such time, the use of a train horns would be considered to have a ***significant and unavoidable*** impact on sensitive receptors developed as part of the project.

5.6-6 a) *The applicant shall provide a written statement to each residential unit and resident located within 400 feet of the UPRR tracks, notifying them of potential noise and vibration issues associated with the railroad tracks, including the following:*

Notice of Disclosure

Each owner's [or renter's] interest is subject to the fact that trains operate at different times of the day on the railway tracks immediately adjacent to a project site; and that by accepting the conveyance of an interest [or lease agreement] in that project, owner [or renter] accepts all impacts generated by the trains.

Posting of Notice of Disclosure in each residential unit

Prior to offering the first residential unit for purchase, lease, or rent, the property owner or developer shall post a copy of the Notice of Disclosure in every unit in a conspicuous location. Also, a copy of the Notice of Disclosure shall be included in all materials distributed

for the Project, including but not limited to: the prospectus, informational literature, and residential lease and rental agreements.

b) *The applicant shall install a sound attenuating wall that achieves a minimum 10 dBA reduction in noise levels attributable to UPRR operations, as demonstrated through a noise study once a site plan is devised and building types are known. The wall shall be erected prior to occupancy of any residential unit located within 400 feet of the centerline of the UPRR tracks.*

c) *Implement Mitigation Measure 5.3-4.*

5.6-7 Implementation of the proposed project could result in the exposure of sensitive land uses to excessive vibration levels associated with the continued operation of the UPRR rail line.

Implementation of the project would locate new sensitive land uses within the vicinity of the existing UPRR tracks. Problems for residential uses, such as disturbance due to groundborne vibration from these sources, are usually contained to areas within about 200 feet of the vibration source.[4] Typically, the main effect of groundborne vibration is to cause annoyances for occupants of nearby buildings. The proposed residential uses in the northern portion of the project site could be located within 200 feet from the centerline of the railroad. However, as discussed earlier, trains typically produce a vibration level of 75 VdB at a distance of 50 feet from the tracks during operation, which is below the aforementioned FTA threshold of 80 VdB. Therefore, the occupants of the proposed residential units would not be exposed to potentially significant vibration levels, and this impact would be ***less than significant***.

Mitigation Measures

None required.

Cumulative Impacts and Mitigation Measures

The geographic context for the analysis of cumulative noise impacts depends on the impact being analyzed. For construction impacts, only the immediate area around the project site would be included in the cumulative context. For operational/roadway related impacts, the context is based upon the transportation analysis which used the City of Manteca version of the SJCOG regional travel demand forecasting model. This cumulative impact analysis considers development of the proposed project, in conjunction with growth and other development within the vicinity of the proposed project in the City of Manteca. Noise is by definition a localized phenomenon, and significantly reduces in magnitude as distance from the source increases. The analysis accounts for all anticipated cumulative growth within this geographic area, as represented by continued implementation of local jurisdictions general plans.

Increases in noise at sensitive uses would occur as a result of construction of the proposed project, along with other construction in the vicinity. Other construction that may occur in the vicinity of the

4 Harris Miller, Miller & Hanson Inc. 2006. *Transit Noise and Vibration Impact Assessment, Final Report*, May.

proposed project site would contribute noise levels similar to those generated for the proposed project. Where this development adjoins the proposed project construction, the combined construction noise levels would have a cumulative effect on nearby sensitive uses. Noise is not strictly additive, and a doubling of noise sources would not cause a doubling of noise levels; however, cumulative construction noise levels would be in excess of 60 dBA L_{dn} at nearby sensitive receptors.

However, as discussed under Impact 5.6-1, construction activities would only occur between the hours of 7 a.m. and 7 p.m., and the City considers construction noise between these hours to be exempt from the standards established in the City's noise ordinance and the City's General Plan.[5] To comply with the City ordinance, construction of the project, as well as other cumulative construction projects, would likely not occur between the hours of 7 p.m. and 7 a.m., the proposed project and all other cumulative development would be exempt, and the cumulative impact associated with construction noise in the Manteca area would be considered less than significant. Similarly, because construction-related noise generated under the proposed project would be exempt from established noise standards, the construction of the proposed project would not be cumulatively considerable and the cumulative impact of the project would also be *less than significant*.

As discussed above, cumulative traffic would result in substantial increases in noise along several roadway segments under future conditions. Roadway noise with the project would increase roadway noise levels above the 3.0 dBA L_{dn} significance threshold for cumulatively considerable contributions of development, as established by the City. As a result, the contribution of the proposed project to future roadway noise levels would exceed the identified thresholds of significance and, therefore, would be considered cumulatively considerable and the cumulative impact would be *significant and unavoidable*.

Other development projects within the City of Manteca could introduce residential development into areas that currently exceed the 60 dBA L_{dn} standard for residential uses. However, such residential development would have to be constructed such that noise levels within exterior living spaces do not exceed the City standard as set forth in the Noise Element of the General Plan and the municipal code. Since any potential new residential development within the City would be required to mitigate through site and building design, insulation and other noise preventative measures, the cumulative impact would be less than significant.

As discussed under Impact 5.6-3, all new development within the City would be subject to design review and be required to adhere to the standards of the City Zoning Code (Section 17.05.020). In addition, all rooftop HVAC equipment would be shielded as a result of implementation of Mitigation Measure 5.6-3; therefore, no source would generate maximum noise levels of greater than 57 dBA L_{eq} at 50 feet. Consequently, multiple units would have to be located within 50 feet of a receptor to achieve noise levels that would exceed the City standards. The development types associated with the proposed project and other nearby projects are not so dense that multiple stationary units would be so closely spaced, either on-site or off-site. Consequently, the cumulative effect of multiple HVAC units and other mechanical equipment would be less than significant and the contribution of the project would not be cumulatively considerable. This would be a *less-than-significant impact*.

5 City of Manteca. *Evans Estates – Pillsbury Estates Project Environmental Impact Report*. April 2009.

As discussed in Impact 5.6-4, the proposed project's construction would produce temporary vibration impacts. However, as discussed in Impact 5.6-4, the construction vibration impact would be significant and unavoidable. Cumulative development in the City of Manteca is not considered likely to result in the further exposure of on-site or off-site receptors impacted by the project to excessive groundborne vibration due to the localized nature of vibration impacts and the fact that all construction would not occur at the same time and at the same location. Only receptors located in close proximity to each construction site would be potentially affected by each activity. Construction activities associated with such projects, which are adjacent to the project site, may overlap with construction activities for the proposed project for some amount of time. Sensitive uses in the immediate vicinity of the project site may be exposed to two sources of groundborne vibration. However, for the combined vibration impact from the two projects to reach cumulatively significant levels, intense construction from both projects would have to occur simultaneously within 50 feet of any receptor. As individual structures within the project area may be constructed concurrently with other related projects, it is possible that intense construction from two or more projects would simultaneously occur at distances of 50 feet or less from existing nearby receptors. Therefore, vibration from future development could potentially combine with construction vibration of the proposed project to result in a potentially significant cumulative impact. Mitigation Measures 5.6-1(a) through 5.6-2(b) would help reduce this impact, but not to a less than significant level. Therefore, the cumulative impact of the proposed project would be *significant and unavoidable*.

Groundborne vibration could conceivably be generated by operation of the proposed project and related projects in the vicinity of the project site. Since no substantial sources of groundborne vibration are anticipated to be built as part of the proposed project, no significant vibration impacts would occur during operation of the proposed project. The same is expected to hold true for other projects in the vicinity of the project site. Consequently, there would be no cumulative operational groundborne vibration impacts to any on-site or off-site receptor. This impact would be *less than significant*.

The proposed project would not increase the frequency of rail traffic along the UPRR tracks. As such, the potential impact of the project with respect to noise and vibration originating from the UPRR tracks and affecting nearby structures would be limited to the project site and would not be cumulatively considerable. Therefore, the cumulative impacts of the project with respect to noise and vibration from the UPRR tracks would be *less than significant*.

5.7 PUBLIC SERVICES

5.7 PUBLIC SERVICES

INTRODUCTION

This section evaluates the effects on public services related to the proposed Austin Road Business Park and Residential Community (ARBPRC) (proposed project) by identifying anticipated public service demands and existing and planned public services availability. The proposed project site encompasses approximately 1,049 acres in unincorporated San Joaquin County. The project site is located within the ten-year planning horizon of the adopted City of Manteca Sphere of Influence and public services would be provided by the City of Manteca. For purposes of this EIR, public services consist of fire protection, police protection, and schools.

Data used to prepare this section were taken from the *San Joaquin County Municipal Code, City of Manteca Municipal Code*, *City of Manteca General Plan* (General Plan) (2003), and various other sources relevant to the proposed project. Full bibliographic entries for all reference materials are provided in footnotes in this section.

Two comments associated with schools were received in response to the NOP circulated for the proposed project (Appendix B). The Manteca Unified School District (MUSD) expressed interest in any potential environmental impact on the schools near the proposed project site. The Ripon Unified School District (RUSD) expressed concern over the proposed project and the ability to accommodate the new student population, land dedication to the school district as well as interest in potential environmental impacts resulting from the proposed project. These concerns are addressed in the schools discussion below. A comment from the Ripon Consolidated Fire District expressed concern over the potential loss of tax revenue that would result from the proposed project. Potential changes in tax revenue do not represent negative physical changes in the environment and are therefore not further addressed in this Draft EIR.

FIRE PROTECTION

ENVIRONMENTAL SETTING

The project site is currently served by the Lathrop-Manteca Fire Protection District (LMFPD), which serves the City of Lathrop, rural Lathrop, and rural Manteca. Under the proposed project, the project site would be detached from LMFPD. Upon detachment from LMFPD and annexation to the City of Manteca, the project site would be served by the City of Manteca Fire Department (MFD).

There are three MFD stations in the City and the locations are identified in Table 5.7-1. The closest station to the project site is Station No. 241, located at 290 S. Powers Avenue, approximately 1.5 miles northwest of the proposed project site.[1] In 2008, the average response time for Station No. 241 was 4.17 minutes. The MFD strives to respond to emergencies within five minutes of being dispatched and considers five minutes or less acceptable according to the MFD standards.[2] In order to maintain an average response time of 5 minutes, the MDF anticipates expanding their services in the southern part of the City with a new station (Station No. 244) in the vicinity of the project site at Atherton Drive and Woodward Avenue.[3]

TABLE 5.7-1

FIRE STATION LOCATIONS

Station	Address	Distance from Proposed Project
Station No. 241	290 S. Powers Ave	1.5 miles
Station No. 242 (Headquarters)	1154 S Union Road	2.6 miles
Station No. 243	399 W. Louise Ave	3.7 miles

Source: MFD. 2009. <www.ci.manteca.ca.us/fire>, September 8,2009.

The MFD received a total of 4,823 calls in 2008:[4] 3,120 calls for Emergency Medical service, 601 service calls, 270 calls related to fire, and 832 other emergency calls.[5] All MFD personnel are trained to a minimum of the Emergency Medical Technician – Basic level and are qualified to operate semi-automatic defibrillators, which are carried on all fire apparatus and the Chief Officer vehicle.[6] Department personnel work closely with the Manteca District Ambulance personnel who provide advance life support and patient transport to local hospitals. MFD has 42 career personnel and 20 reserve personnel.[7] There are 3 engines, 3 reserve engines, 1 medium rescue unit, 1 USAR rescue trailer, 8 staff vehicles, 2 pickups, 1 public education trailer, and 1 ladder truck.[8]

1 Manteca Fire Department (MFD). 2009. *2008 Annual report.* <www.ci.manteca.ca.us/fire/2008AnnualReport.pdf>, (September 8, 2009).
2 *Ibid.*
3 City of Manteca, *Manteca Municipal Services Review*, June 16, 2008, p. 4.
4 Manteca Fire Department (MFD). 2009. *2008 Annual report.* <www.ci.manteca.ca.us/fire/2008AnnualReport.pdf>, (September 8, 2009).
5 *Ibid.*
6 *Ibid.*
7 Manteca Fire Department (MFD). 2009. *Fire Department Statistics,* <www.ci.manteca.ca.us/fire>, (September 8, 2009).
8 *Ibid.*

The City of Manteca has an automatic aid agreement with the LMFPD, which was established in 1936 to provide for fire protection for the City of Lathrop, rural Lathrop, and rural Manteca. The District covers 100 square miles. The LMFPD employees 38 career personnel and 12 reserve firefighters and staffs four fire stations. The two stations closest to the City of Manteca are Stations 32 and 33, located at 22701 S. Union Road and 9121 E. Lathrop Road, respectively.

Regulatory Context

Federal

There are no federal regulations related to fire protection services applicable to the proposed project.

State

California Fire Code

The *California Fire Code* is based on the 2007 International Fire and Building Codes and contains regulations related to construction and maintenance of buildings and the use of premises. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist first responders, industrial processes, and many other general and specialized fire safety requirements for new and existing buildings and premises. The code contains specialized technical regulations related to fire and life safety.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the *California Health and Safety Code*, which include regulations concerning building standards (as also set forth in the *California Building Code*), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

Local

City of Manteca Municipal Code

Title 2 Administration and Personnel Chapter 2.20 (Fire Department) established the MFD for the City and provides guideline for its operations.

Title 15 Building and Construction Chapter 15.24 (Fire Code) adopts the previously discussed State regulations under the City's *Municipal Code* for the purpose of prescribing regulations governing conditions hazardous to life and property from fire, hazardous materials, or explosion.

Fee Schedule VI Development Fee includes development impact fees to fund fire facilities.

City of Manteca General Plan

The City of Manteca Public Facilities and Services Element is concerned with identifying, maintaining, and enhancing fire protection services. Applicable goals and policies of this Element include the following:

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-5 **The City's public services and facilities will support economic development and residential growth in the City.**

Policies

PF-P-42 The City shall endeavor to maintain an overall fire insurance (ISO) rating of 4 or better.

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.

PF-P-44 The City shall provide fire services to serve the existing and projected population.

PF-P-45 The City will establish the criteria for determining the circumstances under which fire service will be enhanced.

Implementation Measures

PF-I-24 The Fire Department shall continuously monitor response times and report annually on the results of the monitoring.

PF-I-25 The Planning Commission and City Engineer will review proposed residential street patterns to evaluate the accessibility for fire engines and emergency response.

IMPACTS AND MITIGATION MEASURES

Method of Analysis

The following analysis considers the potential impacts of the proposed project which would allow up to 4,198 residential units, 5,380,000 square feet (sf) heavy industrial, 1,014,000 sf business/ industrial/professional, 1,178,000 sf general commercial, and 501,000 sf commercial mixed uses. Impacts on fire protection services are considered significant if an increase in population or building area would result in inadequate staffing levels, response times, and/or increased demand for services that would require the construction or expansion of new or altered facilities that might have an adverse physical effect on the environment.

Standards of Significance

For the purposes of this EIR, impacts on fire protection services are considered significant if the proposed project would:

- Result in of the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

Project-Specific Impacts and Mitigation Measures

5.7-1 Implementation of the proposed project would increase the demand for fire protection services.

Development under the proposed project would result in an estimated population increase of approximately 12,888 persons.[9] The proposed project site would initially receive first response from Station No. 241 located 1.5 miles northwest of the project site,[10] but would eventually be served by the future station No. 244 immediately north of the project site at Atherton Drive and Woodward Avenue. The MFD strives to respond to emergencies within 5 minutes of being dispatched, but has no established standard for response time. As stated previously, the MFD currently maintains a response time of 4.17 minutes from Station No. 241 with existing facilities, equipment, and staffing. Due to the project location, the response time for the proposed project area could be 7 minutes from Station 241,[11] but response time from the future Station No. 244 would be less than 5 minutes.

To reduce the impact of new development on the existing MFD facilities, equipment, and personnel, the City requires the submittal of a site plan for review and approval to verify that all development meets the *California State Fire Code* and City building requirements. The City would review plans to ensure that project design and construction meet all regulations of California Health and Safety Code Sections 13000 et seq. and Manteca Municipal Code 15.24.070 (Amendments made in the CA Fire Code) pertaining to fire protection systems, such as the adequate provision of smoke alarms, fire extinguishers, building access, emergency response notification systems (master alarm system), fire flows, hydrant pressure and installation of automatic sprinkler systems in all new structures having a floor area of more than 6,000 sf.

The City of Manteca mitigates impacts created from additional demands on existing fire protection services due to the increase in new structures in the City by imposition of development impact fees to fund public facilities, including fire facilities. Currently, the City levies a fee for every new square foot of covered residential, commercial, and industrial space to cover additional fire protection services required by new development.[12] As noted above, the City is planning a new fire station (No. 244) at Atherton Drive and Woodward Avenue. The project developer would be required to pay development impact fees as established by City ordinance that could be used to help fund fire station improvements, including Station No. 244.

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9 Based on the existing average household size of 3.07 persons for the City of Manteca. U.S. Census Bureau. *2005-2007 American Community Survey 3-Year Estimates City of Manteca* <http://factfinder.census.gov/servlet/ACSSAFFFacts?_event=Search&geo_id=&_geoContext=&_street=&_county=manteca&_cityTown=manteca&_state=04000US06&_zip=&_lang=en&_sse=on&pctxt=fph&pgsl=010>, (September 22, 2009).

10 Randy Sutton, Assistant Chief and Fire Marshal, Manteca Fire Department. personal communication September 23, 2009.

11 *Ibid.*

12 City of Manteca. 2009. *City of Manteca Municipal Code VI. Development Fee.* <http://qcode.us/codes/manteca>.

Compliance with applicable regulations regarding building design and fire protection components and payment of fees based upon project intensity would ensure that impacts on fire protection services would be ***less than significant***.

Mitigation Measure

None required.

Cumulative Impacts and Mitigation Measures

As additional development occurs in the service area of the MFD (the City of Manteca), there would be an overall increase in the demand for fire protection services, including personnel, equipment, and/or facilities. The provision of adequate fire protection services is of critical importance to the City, and funds are allocated to these services during annual monitoring and budgeting processes to ensure that fire protection services are responsive to changes in the City. Funds collected in the form of increased on-going property tax revenues and one-time plan check fees are allocated (in part) to City services, such as fire protection services. In addition, staffing levels are evaluated by the MFD during the annual budgetary process, and personnel are hired, as needed, to ensure that adequate fire protection services are provided. As new development in the City occurs, there would be a corresponding increase in general fund revenues and development impact fees that would be used, in part, to maintain service levels for public services. In addition, as noted above, the City of Manteca has an automatic aid agreement with the LMFPD, which also provides for fire protection for portions of Manteca. This would further reduce effects on fire protection services. Therefore, the cumulative impact on fire protection services would be *less than significant*.

POLICE PROTECTION

ENVIRONMENTAL SETTING

The project site is currently outside of the City Limits of the City of Manteca, so police protection services are provided by the San Joaquin County Sheriff's Department. Police protection for the proposed project would be provided by the Manteca Police Department (MPD) located at 1001 West Center Street in the City of Manteca.[13] MPD is divided into three divisions: Operations Division, Services Division, and Public Affairs Unit. The Operation Division is the largest division of the Department and includes all uniformed officers and their support teams. The units included in the Operations Division are patrol, traffic, community service officers, SWAT, crisis response team, mounted patrol, canine, and bomb squad. The Service Division includes Dispatch, Records, Property and Evidence, Crime Analysis, Animal Services Detectives, School Resource Officers, Gang Unit, and Manteca's Street Crimes Unit (SCU), that support the line police function of the Department. The Public Affairs Unit works directly with the Chief of Police on issues that affect the police department and community. In addition to assisting the Chief of Police, the Public Affairs Unit coordinates several crime prevention programs including the Citizen Police Academy, Drug Awareness Education, and various workplace-training programs such as Workplace Violence prevention.[14]

The MPD also has several active volunteer groups such as the Police Explorers, Citizen's Police Academy graduates, Police Reserves, and the SHARPs. In total, the MPD has over 200 volunteers working with its officers and employees.[15] The MPD also practices Crime Prevention Through Environmental Design (CPTED) principles for new site plans using coordination between the Public Affairs Officer, other City departments, and developers to ensure that new projects are designed to protect public safety.[16]

The MPD currently is staffed by 88 sworn police officers and 29 non-sworn support staff.[17] The average response times for progress Level 1 crimes (emergency) are between 3 to 5 minutes.[18] Average non-emergency response time is 20 minutes to 2 hours, which is acceptable by community standards.[19] The MPD would patrol the proposed project area by patrol beats.[20]

13 Rex Osborn, Public Affairs Officer, Manteca Police Department. personal communication September 23 2009.
14 Manteca Police Department (MPD). 2009. <www.ci.manteca.ca.us/police/Department/default.htm>, (September 22, 2009).
15 *Ibid.*
16 *Ibid.*
17 Rex Osborn, Public Affairs Officer, MPD. personal communication September 23, 2009.
18 *Ibid.*
19 *Ibid.*
20 *Ibid.*

Regulatory Context

Federal and State

There are no federal or state regulations related to police protection services applicable to the proposed project.

Local

City of Manteca Municipal Code

Fee Schedule VI Development Fee includes development impact fees to fund public facilities, including the San Joaquin County Facilities Fee to fund police services.[21]

City of Manteca General Plan

The City of Manteca Public Facilities and Services Element is concerned with identifying, maintaining, and enhancing police protection services. Applicable goals and policies of this Element include the following:

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-5 **The City's public services and facilities will support economic development and residential growth in the City.**

Policies

PF-P-39 The City shall endeavor through adequate staffing and patrol arrangements to maintain the minimum feasible police response times for police calls.

PF-P-40 The City shall provide police services to serve the existing and projected population.

PF-P-41 The City will establish the criteria for determining the circumstances under which police service will be enhanced.

Implementation Measures

PF-I-22 The Police Department shall continuously monitor response times and report annually on the results of the monitoring.

PF-I-23 The Planning Commission and City Engineer will review proposed residential developments to evaluate the accessibility for police patrols and emergency response.

21 City of Manteca. 2009. *City of Manteca Municipal Code VI. Development Fee.* <http://qcode.us/codes/manteca>.

IMPACTS AND MITIGATION MEASURES

Method of Analysis

Impacts on police protection services are considered significant if an increase in population would result in inadequate staffing levels (as measured by the ability of the MPD to respond to call loads) and/or increased demand for services that would require the construction or expansion of new or altered facilities that might have an adverse physical effect on the environment. The MPD prepares annual reports outlining the department's performance and personnel-to-population ratio. The MPD maintained an average response time of 3 to 5 minutes for emergency calls and 20 minutes to 2 hours for non-emergency calls. With a population of 66,451 residents, as of January 1, 2008, Manteca has a current ratio of approximately 1.32 officers for every 1,000 residents; MPD maintains a service standard of one sworn officer per 1,000 residents. To determine the project's impacts on police service levels, the project's police staffing demand was calculated based on police staffing per 1,000 residents. The ratio of police staff to pre-project population was compared to the post-project ratio to determine if police services would be negatively affected.

Standards of Significance

For the purposes of this EIR, impacts on police services are considered significant if the proposed project would:

- Result in the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

Project-Specific Impacts and Mitigation Measures

5.7-2 Implementation of the proposed project would increase the demand for police protection services.

Implementation of the proposed project would increase the demand for police services by increasing the amount of new development in the City. In 2009, there were 88 sworn police officers and 29 non-sworn support staff,[22] but the department was reduced to 69 sworn staff by February 2010 after retirement of some officers and other reductions in staff.[23] MPD's service standard is one sworn officer per 1,000 residents. With a population of 66,451 (as of January 1, 2008), Manteca's sworn officer-to-population ratio was approximately 1.04 officers for every 1,000 residents. The MPD maintained an average response time of 3 to 5 minutes for emergency calls and 20 minutes to 2 hours for non-emergency calls.[24] The MPD currently maintains an acceptable level of service with regard to response time, but response times could increase with implementation of the proposed project.

22 Rex Osborn, Public Affairs Officer, MPD. personal communication September 23, 2009.
23 *Ibid.*
24 *Ibid.*

Development under the proposed project includes up to 4,198 residential units, which could result in an estimated population increase of approximately 13,098.[25] Assuming 69 sworn officers, with a City population of 79,549 with the proposed project, the ratio of officers to 1,000 residents would be 0.87, which would be below the MPD standard of 1 officer per 1,000 residents.

The project developer(s) would be required to pay the required development impact fees as established by City ordinance. The City of Manteca would mitigate impacts on the existing MPD facilities, equipment, and personnel created from additional demands on existing police protection services through the use of development impact fees to fund public facilities, including police.

Additionally, the sales tax generated by retail and commercial sales at the proposed development would increase the City's revenue.[26] The City evaluates the performance of the MPD on an annual basis and commits sufficient funding from project-generated tax revenues to provide adequate staffing levels such that the City's police response times can be maintained. A variety of approaches can be employed to ensure adequate staffing levels, including, but not necessarily limited to, hiring (temporary and/or full-time), authorizing overtime and/or reassignments. It should be noted that while full buildout of the proposed project would result in an officer-to-population ratio below the MPD standard, the increase in population of the project site would be incremental. As a result, as development occurs on the project site and development impact fees are paid by the developer, police staffing can be increased to serve the new population. The incremental nature of the growth and the process by which the MPD evaluates demand for services would ensure that growth in the project area is adequately served by police services. The need for increased staffing is evaluated by the MPD during its annual budgetary process, and personnel are hired, or overtime pay is funded for existing personnel, as needed, to ensure that adequate police protection services are provided. Consequently, impacts on police protection services would be ***less than significant.***

Mitigation Measure

None required.

Cumulative Impacts and Mitigation Measures

As additional development occurs in the City, there would be an overall increase in the demand for police protection services. Additional demands on police protection services are mitigated by imposition of development impact fees on all construction to fund public, including police, facilities. Additionally, property tax and sales tax revenue assist in funding of police operations. As development occurs, these funding sources increase proportionately.

Funds are allocated to the MPD during the annual monitoring and budgeting process to ensure that police protection services are responsive to changes in the City. Staffing levels are evaluated by the

25 Based on the existing average household size of 3.12 persons for the City of Manteca. U.S. Census Bureau. *2006-2008 American Community Survey 3-Year Estimates City of Manteca* <factfinder.census.gov/servlet/ACSSAFFFacts?_event=Search&geo_id=&_geoContext=&_street=&_county=manteca&_cityTown=manteca&_state=04000US06&_zip=&_lang=en&_sse=on&pctxt=fph&pgsl=010>. (November 17, 2009).

26 Rex Osborn, Public Affairs Officer, MPD. personal communication September 23, 2009.

MPD during the annual budgetary process, and personnel are hired, as needed, to ensure that adequate police protection services are maintained. The development impact fees would be used by the MPD to provide additional services and facilities required by growth in the City. Therefore, the cumulative impact on police services in the City would be *less than significant*.

SCHOOLS

ENVIRONMENTAL SETTING

The portion of the project site north of Palm Avenue is within the service area of the MUSD and south of Palm Avenue is within RUSD. Based on the school district service area boundaries and the distribution of residential units in the proposed plan, the proposed project would result in 1,768 residential units that would be served by MUSD and 2,430 residential units served by RUSD.

MUSD serves the cities of Stockton, Lathrop, Manteca, as well as the town of French Camp. MUSD is approximately 113 square miles and is located in the southern part of San Joaquin County.[27] MUSD has a total of 28 schools composed of 20 elementary schools, 4 high schools, 2 continuation schools and 2 community day schools.[28] The total number of students enrolled in MUSD is 23,654 in 2007/2008 school year: 16,425 students were enrolled in the elementary schools, 6,743 students in the high schools, 379 students in the continuation schools, and 84 students enrolled in the community day schools.[29]

Woodward Elementary School is the MUSD school that would most likely serve the project area.[30] Woodward Elementary School is almost at capacity and the district has identified a small 10-acre parcel located just off of Woodward Avenue planned for a K-2 Annex to Woodward Elementary School. The K-2 Annex project would commence when funding becomes available and, when completed, the K-2 Annex would house approximately 250-300 students.[31] In addition, Veritas Elementary and Nile Garden Elementary schools are within a five mile radius of the proposed project site and could potentially serve the students.[32] Nile Garden Elementary School serves grades K through 8 and is located at 5700 East Nile Drive in Manteca, southwest of the proposed project; enrollment for the 2007/2008 school year was 552.[33] Veritas Elementary School serves grades K-8 and is located at 1600 Pagola Street in Manteca, west of the proposed project; enrollment for the 2007/2008 school year was 487.[34]

East Union High School and Sierra High School are within five mile radius and could serve the students of the proposed project site. East Union High School serves grades 9-12 and is located at 1700 North Union Road in Manteca, northwest of the proposed project. Enrollment for the 2007/2008

27 Manteca Unified School District (MUSD). 2009 History of MUSD. <www.mantecausd.net>, (October 15, 2009).
28 Education Data Partnership (EDP). 2009. MUSD District Profile. <www.ed-data.k12.ca.us>, (October 15, 2009.)
29 *Ibid.*
30 MUSD, Karen King, Facilities Planning. Email communication, October 15, 2009.
31 *Ibid.*
32 *Ibid.*
33 EDP. 2009. Nile Garden ES Profile. <www.ed-data.k12.ca.us>, (October 15, 2009.)
34 EDP. 2009. Veritas ES Profile. <www.ed-data.k12.ca.us>, (October 20, 2009).

school year was 1,527.[35] Sierra High School, northwest of the project site had enrollment of 2,000 for the 2007/2008 school year.[36]

RUSD has a total of 6 schools composed of 5 elementary schools and 1 high school.[37] The total number of students enrolled at RUSD is 2,992 in 2007/2008 school year: 2,064 students were enrolled in the elementary schools, 928 students were enrolled in the high school.[38] Parkview Elementary School is located on 751 Cindy Drive in the City of Ripon, approximately 1.84 miles east of the project site with 2007/2008 enrollment of 236.[39] Weston Elementary School is located at 1660 Stanley Drive in the City of Ripon, approximately 2 miles southeast of the proposed project with 2007/2008 enrollment of 467.[40] Colony Oak Elementary School is located on 22241 South Murphy Road in the City of Ripon, approximately 3.24 miles east of the proposed project with 2007/2008 enrollment of 454.[41] Ripon Elementary School is located on 509 West Main Street in the City of Ripon, approximately 2.21 miles southeast of the proposed project with 2007/2008 enrollment of 450.[42] Ripona Elementary School is located on 415 East Oregon Street in the City of Ripon, approximately 2.67 miles southeast of the proposed project with 2007/2008 enrollment of 457.[43] Ripon High School is located on 301 North Acacia Avenue in the City of Ripon, approximately 2.28 miles southeast of the proposed project, with 2007/2008 enrollment of 928.[44]

Regulatory Context

Federal

There are no federal regulations related to school services applicable to the proposed project.

State

California State Assembly Bill 2926 (AB 2926)—School Facilities Act of 1986

In 1986, AB 2926 was enacted by the state of California authorizing entities to levy statutory fees on new residential and commercial/industrial development in order to pay for school facilities. AB 2926, entitled the *School Facilities Act of 1986*, was expanded and revised in 1987 through the passage of AB 1600, which added Section 66000 et seq. of the Government Code. Under this statute, payment of statutory fees by developers would serve as total CEQA mitigation to satisfy the impact of development on school facilities.

35 EDP. 2009. East Union HS Profile. <www.ed-data.k12.ca.us>, (October 15, 2009).
36 EDP. 2009. Sierra HS Profile. <www.ed-data.k12.ca.us>, (October 15, 2009).
37 EDP. 2009. RUSD District Profile. <www.ed-data.k12.ca.us>, (October 15, 2009).
38 EDP. 2009. RUSD District Profile. <www.ed-data.k12.ca.us>, (October 15, 2009).
39 EDP. 2009. Parkview ES Profile. <www.ed-data.k12.ca.us>, (October 15, 2009).
40 EDP. 2009. Weston ES Profile. <www.ed-data.k12.ca.us>, (October 15, 2009).
41 EDP. 2009. Colony Oak ES Profile. <www.ed-data.k12.ca.us>, (October 15, 2009).
42 EDP. 2009. Ripon ES Profile. <www.ed-data.k12.ca.us>, (October 15, 2009).
43 EDP. 2009. Ripona ES Profile. <www.ed-data.k12.ca.us>, (October 15, 2009).
44 EDP. 2009. Ripon HS Profile. <www.ed-data.k12.ca.us>, (October 15, 2009).

California Government Code Section 65995—School Facilities Legislation

The School Facilities Legislation was enacted to generate revenue for school districts for capital acquisitions and improvements.

California Senate Bill 50 (SB 50)

The passage of SB 50 in 1998 defined the Needs Analysis process in Government Code Sections 65995.5-65998. Under the provisions of SB 50, school districts may collect fees to offset the costs associated with increasing school capacity as a result of development. The fees (referred to as Level One fees) are assessed based upon the proposed square footage of residential, commercial/ industrial, and/or parking structure uses. Level Two fees require the developer to provide one-half of the costs of accommodating students in new schools, while the state would provide the other half. Level Three fees require the developer to pay the full cost of accommodating the students in new schools and would be implemented at the time the funds available from Proposition 1A (approved by the voters in 1998) are expended. School districts must demonstrate to the state their long-term facilities needs and costs based on long-term population growth in order to qualify for this source of funding. However, voter approval of Proposition 55 on March 2, 2004, precludes the imposition of the Level Three fees for the foreseeable future. Therefore, once qualified, districts may impose only Level Two fees, as calculated according to SB 50.

Local

City of Manteca Municipal Code

Title 16 (Subdivisions), Part III (Dedications, Reservations, and Improvements), Chapter 16.21 (Dedications and Reservations) is to set forth requirements for dedications and reservations related to the division of land. Section 16.21.100 (School Site Dedication) requires school site dedication as described below:

> As a condition of approval of a tentative map, or a tentative parcel map, and in accordance with Government Code Section 66478, a subdivider who develops or completes the development of one or more land division which the Manteca Unified School District shall dedicate to the school district such lands as the city shall deem necessary for the purpose of constructing thereon elementary schools necessary to assure the residents of the land division adequate public school service.
>
> A. The requirement for dedication shall be imposed at the time of approval of the tentative map. If within thirty days after the requirement of dedication is imposed by the city the school district does not offer to enter into a binding commitment with the subdivider to accept the dedication, the requirement shall automatically be terminated. The required dedication may be made any time before, concurrently with, or up to sixty days after the filing of the final map or parcel map on any portion of the land division.
>
> B. The school district shall, if it accepts the dedication, repay to the subdivider or his or her successors the original cost to the subdivider of the dedicated land, plus a sum equal to the total of the following amounts:
>
> 1. The cost of any improvements to the dedicated land since acquisition by the subdivider;

2. The taxes assessed against the dedicated land from the date of the school district's offer to enter into the binding commitment to accept the dedication;

3. Any other costs incurred by the subdivider in maintenance of such dedicated land, including interest costs incurred on any loan covering such land.

C. The provisions of this section shall not be applicable to a subdivider who has owned the land being subdivided for more than ten years prior to the filing of the tentative map. (Ord. 936 §1, Ex. A (part), 1992)

Fee Schedule VI Development Fee includes MUSD Residential/Commercial Property Developer Fee to fund school services. The funds are paid directly to the school district.

City of Manteca General Plan

The City of Manteca Public Facilities and Services Element is concerned with identifying, maintaining, and enhancing school services. Applicable goals and policies of this Element include the following:

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-5 **The City's public services and facilities will support economic development and residential growth in the City.**

Goal PF-13 **Maintain sufficient land inventory so that the Manteca Unified School District can provide for the educational needs of Manteca residents.**

Policies

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.

PF-P-34 The City shall cooperate with the Manteca Unified School District in their collection of school facility development fees from new development.

PF-P-35 Financing of new school facilities will be planned concurrent with new development.

PF-P-36 The City and Manteca Unified School District will work together to develop criteria for the designation of school sites and consider opportunities for reducing the cost of land for school facilities. The City will encourage the school district to comply with City standards in the design and landscaping of school facilities.

PF-P-37 The City will consider opportunities for joint-use of facilities with the school district. When feasible, a joint-use agreement will be pursued to maximize public use of facilities, minimize duplication of services provided, and facilitate shared financial and operational responsibilities.

PF-P-38 Schools must be located away from hazards of sensitive resource conservation areas, except where the proximity of resources may be of educational value and the protection of resources is reasonably assured.

Implementation Measures

PF-I-18 The City will maintain an inventory of public lands to identify opportunities for joint-use facilities and neighborhood schools.

PF-I-19 The City shall cooperate with the Manteca Unified School District to select a suitable location for a high school south of SR 120 and to select suitable locations within new residential development for neighborhood K-8 schools.

PF-I-20 The City will request an annual meeting with the Administrator and the Board of Trustees of the Manteca Unified School District to review development issues and opportunities for cooperation between the school district and the City.

PF-I-21 The City will encourage the expansion of higher education program offerings and opportunities in Manteca.

IMPACTS AND MITIGATION MEASURES

Method of Analysis

Impacts on schools are determined by analyzing the projected increase in the demand for schools as a result of the proposed project and comparing the projected increase with the schools' remaining capacities to determine whether new or altered facilities would be required. Impacts on schools are considered to be less than significant with payment of the State Department of Education Development Fee in conformance with AB 2926, which was enacted to provide for school facilities construction, improvements, and expansion.

Standards of Significance

For the purposes of this EIR, impacts on school facilities are considered significant if the proposed project would:

- Result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives for schools.

Project-Specific Impacts and Mitigation Measures

5.7-3 The proposed could generate additional students.

Full build out of the proposed project could result in up to approximately 4,198 new housing units. 1,768 residential units are proposed within the MUSD service area and 2,430 residential units are proposed within the RUSD service area. As shown in Table 5.7-2 (Projected Increase in School Enrollment Resulting from the Proposed Project), the proposed project would yield approximately 1,464 additional students for MUSD and 1,528 for RUSD.

TABLE 5.7-2

PROJECTED INCREASE IN SCHOOL ENROLLMENT
RESULTING FROM THE PROPOSED PROJECT

Manteca Unified School District[1]			
Grade level	**Student Yield Rate**	**Housing Units**	**Total Students**
Kindergarten - 6	0.530	1,768	937
7 - 8	0.106	1,768	187
9 - 12	0.192	1,768	340
		Total	***1,464***
Ripon Unified School District[2] [3]			
Grade level	**Student Yield Rate**	**Housing Units**	**Total Students**
Kindergarten - 6	0.370	2,430	899
7 - 8	0.091	2,430	221
9 - 12	0.168	2,430	408
		Total	***1,528***

Sources:
1. MUSD. 2009. Email communication with Facilities planning on October 15, 2009.
2. Total School Solutions. 2008. RUSD Needs Analysis School Facilities Fee Level 2/3. April 23.
3. Total School Solutions. 2008. RUSD Developer Fee Justification Document for Residential, Commercial and Industrial Development Projects. May 5.

The MUSD student yield rate is 0.530 students per household for elementary school (grades K-6), 0.106 students per household for middle school (grades 7-8), and 0.192 students per household for high-school (grades 9-12).[45] Applying the MUSD student yield rate to the portion of the proposed project within the MUSD service area would yield approximately 1,464 students, which represents an approximately 6 percent increase from the current 2007/2008 total enrollment of 23,654 students for the MUSD.

The RUSD student yield rate is 0.370 students per household for elementary school (K-6), 0.091 students per household for middle school (7-8), and 0.168 students per household for high-school (9-12).[46,47] Applying the RUSD student yield rate to the portion of the proposed project within the RUSD service area would yield approximately 1,528 students, which represents an approximately 51 percent increase from the current 2007/2008 total enrollment of 2,992 students for the entire RUSD.

The additional students could have a significant impact on the school districts; however, this impact would be reduced through the payment of school fees, required for all new development. The State of California is responsible for the funding of public schools. To assist in providing facilities to serve students generated by new development, the governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district, for the purposes of funding the construction or reconstruction of school facilities. The proposed project developer(s) would be required to pay all development impact fees for the purpose of providing educational services to students within the proposed project.

45 Karen King, Facilities Planning. Manteca Unified School District (MUSD) Personal communication, October 15, 2009.
46 Total School Solutions. 2008. *RUSD Needs Analysis School Facilities Fee Level 2/3*. April 23.
47 Total School Solutions. 2008. *RUSD Developer Fee Justification Document for Residential, Commercial and Industrial Development Projects.* May 5.

New schools or physical modifications to existing schools could generate a physical effect on the environment. If school districts acquire land within the ARBPRC project site, there would be no additional impacts associated with the construction of school facilities beyond that identified in this Draft EIR since this Draft EIR assumes construction of the entire project area. If schools districts acquire land outside the ARBPRC project area, the district would need to prepare a separate environmental analysis to determine the potential impacts in those offsite areas. The City cannot speculate as to the location of potential future school facilities. Development fees collected would offset any additional increase in educational demand at the schools serving the project site. Therefore, the impact on schools would be ***less than significant***.

Mitigation Measure

None required.

Cumulative Impacts and Mitigation Measures

As the additional development occurs in the City, there would be an overall increase in the number of students enrolled in the MUSD and RUSD. This increase in students could require the construction of new schools within the MUSD and RUSD. Especially for RUSD, the existing schools serving the project site do not have enough space to accommodate the additional student population. This is considered a significant cumulative impact.

As described above, development impacts fees and land taxes are collected for necessary improvements to the school infrastructure in the school districts. The City of Manteca requires that developers pay the prevailing development fees for those residential and commercial/industrial uses that are subject to such fees. State law has determined that the payment of the school fees reduces a project's impact to less-than-significant levels. The development impact fees associated with this concept plan constitutes full mitigation for impacts to educational services because the City has determined that they would adequately fund the resulting increase in demand for those services. Thus, since implementation of the proposed project would result in a less-than-significant impact there would not be a cumulative impact to schools. The cumulative impact, therefore, on educational services in the City would be *less than significant*.

5.8 PUBLIC UTILITIES

5.8 PUBLIC UTILITIES

INTRODUCTION

This section evaluates the effects on public utilities related to the proposed Austin Road Business Park and Residential Community (ARBPRC; proposed project) by identifying the anticipated demand for utilities, as well as existing and planned utility availability. For purposes of this EIR, public utilities include domestic water supply, wastewater conveyance and treatment, storm drainage, and solid waste collection and disposal. In addition, this section analyzes electricity and natural gas utilities. In a comment letter on the Notice of Preparation (NOP), the San Joaquin County Department of Environmental Health (EHD) noted that there are existing wells and septic systems on site. As noted in the letter, these wells and septic systems must be destroyed under permit with inspection by EHD. Compliance with conditions in the permit would ensure that significant impacts would not occur as a result of the removal of existing wells and septic systems. This issue is not further addressed in this Draft EIR. No other comments associated with public utilities were received in response to the NOP circulated for the proposed project.

Data used to prepare this section were taken from the *Austin Road Utility Master Plan* (2008)*, City of Manteca Wastewater Collection System Master Plan Update* (2006)*, County of San Joaquin Municipal Code,* the *City of Manteca Municipal Code*, the *City of Manteca General Plan* (General Plan) (2003), the *City of Manteca Urban Water Management Plan* (2005)*, the Water Supply Assessment for the Austin Road Business Park and Residential Community* and various other sources relevant to proposed project. Full bibliographic entries for all reference materials are provided in footnotes in this section.

WATER SUPPLY

INTRODUCTION

The water supply section of the EIR describes the water supply that would serve the proposed project in relation to overall water supplies provided by the City of Manteca. The analysis estimates the expected water demand resulting from the proposed project, evaluates the effects of the proposed project on existing and future water infrastructure, and recommends mitigation measures where appropriate. Information in this section is based on the WSA prepared the City of Manteca for the ARBPRC, the 2005 City of Manteca Urban Water Management Plan (UWMP), and information from City staff. The WSA is included as Appendix F.

ENVIRONMENTAL SETTING

Existing Water Sources and Supplies

Surface Water Supplies

In 1995, the cities of Manteca, Escalon, Lathrop, and Tracy contracted with the South San Joaquin Irrigation District (SSJID) for treated surface water through the South County Water Supply Program. Contracted water deliveries would occur in two phases, concurrent with construction of the water treatment plant facilities and transmission lines. Construction of the water treatment plant and transmission lines was completed in 2005 and treated surface water deliveries began in July of 2005. In Phase 1, the contract entitles the City of Manteca to 11,500 acre-feet (AF) of treated surface water per year through 2010. Treated surface water deliveries the City of Manteca are scheduled to increase annually until the full contract amount of 18,500 acre-feet per year (AFY) is reached under Phase 2. Deliveries related to Phase 2 depend on the water demand in each of the participating cities. Phase 2 of the Water Supply Program is scheduled for completion in 2012. [1] While Phase 2 would be required for buildout of the City's General Plan, Phase 2 improvements would not be required to accommodate the proposed project under exiting-plus-project conditions.

Groundwater Supplies

Manteca is located in the Eastern San Joaquin County Groundwater Basin (ESJCGB), which is a subbasin of the San Joaquin Valley Groundwater Basin. The ESJCGB subbasin number is 5-22.01. DWR's Bulletin 118 - 80, *Ground Water Basins in California* classified the ESJCGB as a basin in a critical condition of overdraft. The Northeastern Groundwater Banking Authority and the San Joaquin County Flood Control and Water Conservation District (SJCFCWD) undertook the development of a groundwater management plan for San Joaquin County, which includes most of the ESJCGB. The San Joaquin County Board of Supervisors adopted the groundwater management plan in September of 2005.

The water bearing units underlying the City extend to depths in excess of 600 feet and include four geologic formations. In increasing depth from the surface, the formations are the Victor Formation, the Laguna Formation, the Mehrten Formation, and the Valley Springs Formation. The aquifers are alluvial formations with significant variation in grain size, with lenses and strata of high yield gravel, permeable sandy material, and lower permeability clays. Recharge occurs from foothill runoff east of the City, as well from the Stanislaus River. The City's wells primarily withdraw water from the Laguna and Victor Formations.

Water Supply Reliability

As stated above, the City has two water supply sources, local groundwater and surface water from the SSJID South County Water Supply Program. On an annual basis, groundwater provides

1 South San Joaquin Irrigation District, <http://www.ssjid.com/serv-H2O-domestic.htm>, (January 26, 2010).

approximately 47 percent of the City's water supply and the balance, approximately 53 percent, comes from treated surface water. The reliability of these sources is discussed below.

Groundwater Basin Conditions

The reliability of the City's groundwater was evaluated with respect to seasonal conditions, climatic variations and long-term groundwater overdraft. Historical groundwater levels in the vicinity of the City were assessed under seasonal conditions and climate variation. The resulting long-term water reliability was estimated by groundwater modeling using the historical groundwater levels and the effects of saline intrusion along the western edge of the groundwater basin.

The City's groundwater supply has been highly reliable with respect to seasonal conditions and climatic variations. During the peak summer water demands, the static and pumped water levels of the wells remain fairly consistent throughout the summer season.

Fluctuations in groundwater levels from climatic variations have been documented through monitoring by the SJCFCWD. The most notable variations in groundwater from climatic conditions were the steep declines observed at one of SSJID's wells in the southeast part of Manteca during the droughts of 1976-1977 and 1987-1992. Although the groundwater levels declined during the drought, the City did not experience any groundwater pumping problems. The groundwater levels recovered following the droughts, but the recovered level was below the pre-drought level and tended to follow the long-term pattern of groundwater decline observed in the area.

Groundwater overdraft in the basin is a concern to the City as this poses a long-term threat to the reliability of the groundwater supply. There has been a gradual drop in groundwater levels over time with the current groundwater level about 4 to 5 feet below the 1974 groundwater level. Basin groundwater modeling predicts a continued decline in groundwater levels if the overdraft continues. The models predict groundwater level drops of 10 to 15 feet in the Manteca area by 2030 if there are no changes in groundwater pumping in the basin. The most recent model results reported in the Flood Control District's Comprehensive Water Management Plan Report of 2001 predicted a groundwater decline of 10 feet from the 2000 levels by 2030 if there is no change in groundwater pumping. The drop in groundwater level is primarily due to the excessive groundwater pumping in the central and eastern portion of the groundwater basin, but all groundwater withdrawals contribute to the basin overdraft problem, including the City of Manteca's withdrawal.

One of the most serious consequences of the drop in groundwater levels is the possible saline intrusion along the western boundary of the basin. Saline intrusion has already occurred in portions of Stockton. The extent of saline intrusion in the Manteca area is not well defined but is known to be west of Lathrop. Potential saline intrusion is a significant issue that could affect the reliability of the existing groundwater system and may require well abandonment or treatment to maintain water quality.

Contamination of a well or the groundwater and changes in regulatory water quality standards could affect the reliability of the City's water supply but are not considered to be significant for several reasons. Changes in water quality are likely to occur gradually and would not affect all wells

simultaneously. The gradual change in water quality would allow time for treatment or alternative supplies to be investigated and developed. Similarly, changes in regulatory water quality requirements would be known in advance and allow time for treatment or alternative supplies to be developed. Should these conditions occur, the City would undertake well modification or treatment to eliminate or remove the contaminant or, if necessary, drill new wells to maintain the water supply. Even if the contamination occurred rapidly at a single well, the City has sufficient capacity to take the well out of service without serious loss in system reliability.

Groundwater Management

The Eastern San Joaquin Groundwater Basin Groundwater Management Plan (GMP) estimates the agricultural, municipal, and industrial groundwater extraction in Eastern San Joaquin Groundwater Basin at 867,600 AFY. 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 AFY.

Modeling conducted for the GMP showed a continued decline in groundwater levels and loss of aquifer storage. The Integrated Regional Watershed Management Plan (IRWMP) for the groundwater basin was developed and adopted in 2007. The IRWMP presented a water management strategy and course of action to implement an integrated conjunctive use program to manage and restore the groundwater resource.

The City of Manteca plans to manage its groundwater use to meet the safe aquifer yield for the area, which was estimated at 1 AF per acre per year. The City began reducing its groundwater extraction to the safe aquifer yield when the surface water became available in 2005. Prior to the delivery of surface water from SSJID, the City had been extracting groundwater at a rate of 2.4 AF per acre per year.

Surface Water

The South County Water Supply Program provides treated surface water from the Stanislaus River. SSJID's entitlement is 300,000 AFY. Oakdale Irrigation District also holds a 300,000 AFY entitlement. However, these entitlements are dependent on New Melones Reservoir inflow and subject to curtailment in dry years. Normal water deliveries would be provided when inflows to New Melones Reservoir exceed 600,000 AF. Water deliveries are reduced when inflows are less than 600,000 AF.

The available water supplies for distribution are shared equally between SSJID and Oakdale Irrigation District when inflows are less than 600,000 AF. The South County Surface Water Project participants' agreement with SSJID indicates the municipal and agricultural users would share surface water reductions equally. An examination of the Stanislaus River flows from 1922 to 2005 indicated the full entitlement has been available about 80 percent of the time. The lowest inflow year into New Melones Reservoir was 1977 at 271,000 AF and would have resulted in 37 percent reduction in surface water delivery. Other low inflow years were 1924 (385,000 AF) and 1988

(390,000 AF) and would have reduced surface water delivery by 24 percent and 23 percent, respectively. The average reduction in dry years between 1922 and 2005 is 14.5 percent.

Recycled Water

The 2005 Water Quality Control Facility Master Plan evaluated the use of recycled wastewater for irrigation of City parks, public areas, and other open spaces in lieu of the currently used potable water and onsite groundwater supplied irrigation systems. To provide reclaimed water for these uses additional treatment (filtration and disinfection system improvements) would be required along with a recycled water distribution system. The City was required to construct tertiary filtration facilities at the Water Quality Control Facility (WQCF) for discharge to the San Joaquin River and will construct an ultra-violet disinfection system. Construction of the filtration and disinfection facilities began in 2006 and was completed in 2007. The construction of the tertiary filters and disinfection facility will promote the development of water recycling in Manteca. Two recycled water projects are currently planned. One project is a water truck fill station to provide water for dust control at construction sites. The second project will provide irrigation water to a softball play complex located near to the WQCF. The use of reclaimed water landscape irrigation would reduce the City's potable water demand and help extend local available groundwater or surface water supplies.

The 2005 Water Quality Control Facility Master plan includes urban landscape irrigation with recycled water as a future component for disposal of the WQCF wastewater. The WQCF Master Plan estimates the potential demand for urban landscape irrigation with recycled water at 3,670 AFY at buildout. Manteca's 2005 UWMP estimates the recycled water use for landscape irrigation at 2,300 AFY by 2030 as indicated in Table 5.8-1.

TABLE 5.8-1

CURRENT AND PROJECTED WATER SUPPLIES (AFY)

Sources	2010	2015	2020	2025	2030
Surface water from SSJID	9,704	11,470	13,557	16,444	18,500
Groundwater Production	8,606	10,171	12,022	13,790	13,790
Total Potable Supplies	18,310	21,641	25,579	30,234	32,290
Recycled Water	161	645	1,700	2,100	2,300
Total Supplies	18,471	22,286	27,279	32,334	34,590

Source: City of Manteca 2005 Urban Water Management Plan, p. 25.

Total Water Supply

As stated previously, the City uses a combination of water supplies from locally produced groundwater and purchased treated surface water from the SSJID. As shown in Table 5.8-1, in 2010 the City's water supply is expected to be 18,471 AFY; in 2015 supply increases 22,286 AFY and then by 2030 supply increases to 34,590 AFY.

Treatment and Distribution

The SSJID was formed in 1909 under the Irrigation District Act; SSJID comprises about 72,000 acres in the southeastern portion of San Joaquin County, all of which is located within the Eastern San Joaquin Groundwater Basin. SSJID owns and operates an extensive system of conveyance structures and canals. To address the water supply needs of the urban areas of the District and the Region, SSJID began in 2005 the delivery of up to 44,000 AFY of treated surface water from Woodward Reservoir to the cities of Escalon, Manteca, Lathrop, and Tracy.[2] The net benefit to the Basin is expected to be approximately 30,000 AFY. SSJID and Oakdale Irrigation District also provide 30,000 AFY of water from New Melones Reservoir to the City of Stockton through a 10-year transfer agreement.[3] SSJID owns and operates the Nick C. DeGroot Water Treatment Plant (WTP) at Woodward Reservoir. The WTP has a current production capacity of 40 million gallons per day (mgd) (44,850 AFY). SSJID's agreement for surface water deliveries to Manteca is for 11,500 AFY through 2010 and 18,500 AFY after Phase 2 of construction at the WTP is completed. Current and planned capacity of the WTP is adequate to supply Manteca and the other cities under contract with SSJID.

Surface water is delivered via transmission lines to each of the cities served from the WTP. Surface water is blended with locally produced groundwater prior to distribution to Manteca's customers.

Manteca owns and operates its own groundwater wells. As of 2005, there were 17 wells in Manteca's water system,[4] ranging in depth from 190 feet to 400 feet. One well is temporarily shut down for water quality remediation. The combined production capacity of the 17 wells is 27,010 gpm, and the combined production capacity of the 16 operating wells is 25,820 gpm. The City's annual groundwater production increased from 4,600 AF in 1975 to 14,900 AF in 2004,[5] but as discussed above, decreased after surface water became available in 2005. The 2005 Water Master Plan includes the construction of 11 new wells in its capital improvement plan to provide water for future development. Well 26 will be constructed in the near future and will also include the construction of a 1-million gallon storage tank and 3,000 gallon per minute booster pump.[6]

Manteca's distribution system consists of groundwater pumping facilities, tie-ins with SSJID's transmission system and distribution lines to residential and business customers in Manteca's service area. The proposed water system would operate under a single-pressure zone consistent with the citywide master plan and a 12-inch diameter pipe network that is consistent with the citywide master plan would be constructed for the project. Initial phases of development would rely on two connection points to the existing city system. The most likely connections to be made with the first phase would be in Moffat Boulevard and Pillsbury Road. An additional connection point at

2 Northeastern San Joaquin County Groundwater Banking Authority, *Eastern San Joaquin Groundwater Basin Groundwater Management Plan*, September 2004.

3 *Ibid.*

4 *City of Manteca 2005 Urban Water Management Plan*, p. 11.

5 *Ibid.*

6 City of Manteca. 2009. *Water Supply Assessment for the Austin Road Business Park and Residential Development*, December 7.

Woodward Avenue would be added with future phases of development. A connection point in Main Street is also possible in the event adequate pressure cannot be maintained. The proposed potable water system is shown on Figure 2-9.

Current Water Use and Projected Water Demand

As shown in Table 5.8-2, in 2005 the City's water demand was 14,942 AFY, in 2006 14,801 AFY, and 15,441 AFY in 2008. Growth in demand has increased by 499 AF over the last 4 years, which is an increase of 3.23 percent.

TABLE 5.8-2

CITY OF MANTECA WATER PRODUCTION AND DEMAND (AFY) 2005-2008

Year	2005	2006	2007	2008
Groundwater Production	11,275	8,062	9,119	8,557
Surface water Demand	3,667	6,739	6,364	6,884
Total	14,942	14,801	15,483	15,441

Source: Water Supply Assessment for the Austin Road Business Park and Residential Development, Table 2, City of Manteca Production History.

Table 5.8-3 shows estimated water demand in the City through 2030. It should be noted that projections from the UWMP are from 2005 when the pace of development in the City and the region exceeded that in the current economic conditions. Consequently, projections from the 2005 UWMP could overstate demand in the short term. Table 5.8-3 shows that in 2010 the City's water demand is expected to increase to 18,310 AFY, by 2020 demand would increase to 25,579, and by 2030 demand in the City is estimated to be 35,735 AFY. Growth in demand over the next 20 years (2010 – 2030) is approximately 17,425 AF or an increase of 51 percent over the projected 2010 demand.

TABLE 5.8-3

PROJECTED CITY OF MANTECA WATER DEMAND (AFY) 2010-2030

Year	2010	2015	2020	2025	2030
Single Family	12,372	14,622	17,282	20,428	24,145
Multiple Family	1,553	1,836	2,170	2,565	3,031
Commercial	1,431	1,692	2,000	2,364	2,794
Industrial	126	149	177	209	247
Institutional/Government	390	460	543	642	759
Landscape	729	862	1,019	1,204	1,423
Unaccounted-for System Losses	1,709	2,020	2,388	2,822	3,336
Total	18,310	21,641	25,579	30,234	35,735

Source: City of Manteca 2005 Urban Water Management Plan, Table 7 p. 25.

Supply and Demand Comparison

Table 5.8-1 shows current and projected water supply while Table 5.8-3 shows current and projected water demand. These data indicate that in average water years, the City has sufficient water to meet its customers' needs through 2025, assuming continued development of groundwater wells and

completion of the South County Surface Water Project. On an annual basis, there is sufficient water available from the existing and planned water sources. The City can also meet the average and maximum day demand. However, the WSA prepared for the proposed project shows the existing and planned water supply sources are inadequate to meet the demand at the project site and in the City's service area under peak hour demand conditions. The projected peak hour water demand at the proposed project is 5,134 gpm[7] and, assuming an average day demand of 2,640,642 gallons per day,[8] the project's annual demand would be 2,956 AFY.

Meeting the additional water demand contributed by the proposed project would require peaking facilities such as tanks, booster pumps, or wells sufficient to increase the systems overall peak distribution capacity by 5,134 gallons per minute (gpm).[9] The additional supply can be provided by combination of wells or storage, such as a 1 million gallon storage tank and booster pump station with a minimum capacity of 3,000 gpm, an upgrade to Well 26 booster tank storage to 1,500 gpm, and/or the addition of one or two new wells and treatment with a capacity of 1,500 gpm.

In the long term, the City projections show an adequate water supply for future growth in the City, including the proposed project, through the year 2025. However, the City projects a supply of 34,590 AFY and demand of 35,735 (Tables 5.8-1 and 5.8-3, respectively) for a shortage of 1,145 AFY in the year 2030.

Current Water Use on the Project Site

As described in Section 5.2, Agricultural Resources, approximately 1,020 acres of the project site are in agricultural production. The City of Manteca does not provide water for agricultural users; the source any agricultural water used on the site is from SSJID or from private wells on the site. Agricultural water use varies by crop, but estimates of demand can be ascertained by comparing similar crop types in similar climates. Assuming approximately 36 inches of irrigation water per year per acre,[10] the current demand on the project site would be 3,060 AFA.

REGULATORY SETTING

Federal Regulations

Safe Drinking Water Act

The basic regulations governing the RWS are associated with the federal and California *Safe Drinking Water Act*s. The federal *Safe Drinking Water Act*, passed in 1974 and amended in 1986 and 1996, is the nation's primary law regulating drinking water quality and is implemented by the United States Environmental Protection Agency (US EPA). The Act authorizes the US EPA to set national health-based standards for drinking water and requires many actions to protect drinking

7 *Ibid.*, p. 2.

8 *Ibid.*, Table 1.

9 *Ibid.*

10 City of Yuba City, *Water Supply Assessment for the Proposed Lincoln East Specific Plan*, March 2009. p. 4-2. Prepared by PBS&J.

water and its sources, including rivers, lakes, reservoirs, springs, and groundwater wells. In addition to source water protection, the Act also provides for treatment, monitoring, sampling, analytical methods, reporting, and public information requirements. Implementation and enforcement of both the federal and California *Safe Drinking Water Act*s are under the jurisdiction of the California Department of Public Health (CDPH), Division of Drinking Water and Environmental Management. Drinking water regulations are set forth in the California Code of Regulations (CCR), Titles 17 and 22.

The amended federal S*afe Drinking Water Act* established phases of regulation and a number of regulatory deadlines to address drinking water requirements. This amended Act is implemented through subsidiary rules for regulation of specific contaminants or for monitoring or treatment requirements. The major US EPA drinking water regulations are listed below:

- Surface Water Treatment Rule
- Interim Enhanced Surface Water Treatment Rule
- Total Coliform Rule
- Stage 1 Disinfectants and Disinfection Byproducts Rule
- Stage 2 Disinfectants and Disinfection Byproducts Rule
- Long Term 1 Enhanced Surface Water Treatment Rule
- Long Term 2 Enhanced Surface Water Treatment Rule
- Variances and Exemptions Rule
- Lead and Copper Rule
- Radionuclides Rule
- Filter Backwash Recycling Rule
- Arsenic Rule
- Public Notification Rule

State Regulations

Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, Section 10610 *et seq*.)

The *Urban Water Management Planning Act* (Act) was developed due to concerns over potential water supply shortages throughout California. It requires information on water supply reliability and water use efficiency measures. Urban water suppliers are required, as part of the Act, to develop and implement UWMPs to describe their efforts to promote efficient use and management of water resources. The City prepared a UWMP, which was adopted by the City Council in December 2005. Specifically, the City's 2005 UWMP described the existing and planned sources of water available to the supplier over a prescribed five-year period and included a description of all water supply projects and programs that may be undertaken to meet total projected water use over the next 20 years.

Water Conservation Projects Act

California's requirements for water conservation are codified in the *Water Conservation Projects Act of 1985* (*Water Code* Sections 11950–11954).

Consistent with *California Water Code* Sections 11950–11954, the City has implemented various water conservation efforts, as well as a Water Shortage Contingency Plan that identifies actions that can be taken to respond to a catastrophic interruption of water supply.

Water Code Sections 10910 et seq. (Senate Bill 610)

In 2002, the California Legislature adopted legislation concerning water supply planning efforts in the state of California. Codified at *Water Code* Sections 10910 *et seq*., the law coordinates local water supply and land use decisions to assist California's cities and counties with respect to the provision of adequate water supplies. Section 10910 requires cities and counties to prepare a WSA when considering approval of certain development projects in order to determine whether projected water supplies can meet the project's anticipated water demand. The projects for which WSAs must be prepared include *(a)* a residential development of more than 500 dwelling units; *(b)* a shopping center or business employing more than 1,000 people or having more than 500,000 sf of floor space; *(c)* a commercial office building employing more than 1,000 people or having more than 250,000 sf; *(d)* a hotel or motel with more than 500 rooms; *(e)* an industrial or manufacturing establishment housing more than 1,000 people or having more than 650,000 sf or 40 acres; *(f)* a mixed-use project containing any of the foregoing; or *(g)* any other project that would have a water demand at least equal to a 500-dwelling-unit project. The WSA, which is also required as part of the CEQA process, includes an identification of existing water supply assessments, water rights, or water service contracts relevant to the identified water supply for the proposed project and water received in prior years pursuant to those entitlements, rights, and contracts. If the water demand for the proposed development has been accounted for in a recently adopted UWMP, the water supplier may incorporate information contained in that UWMP to satisfy certain requirements of a WSA.

Local Regulations

City of Manteca General Plan

The City of Manteca Public Facilities and Services Element and the Resource Conservation Element are applicable to water supply and the proposed project. Applicable goals and policies of these Elements include the following:

Goal PF-7. **Maintain an adequate level of service in the City's water system to meet the needs of existing and projected development.**

Policies

PF-P-4 Secure sufficient sources of water to meet the needs of the existing community and planned residential and commercial growth.

PF-P-5 City will continue to rely principally on groundwater resources for its municipal water in the near term, will participate in the regional improvements to deliver surface water to augment the City's groundwater supply.

PF-P-6 The City shall develop new water sources as necessary to serve new development.

PF-P-7 The City shall develop new water storage facilities and major distribution lines as necessary to serve new development.

PF-P-8 The City will provide water for future development to maintain a balance of jobs and housing.

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.

PF-P-10 Development of private water wells within the City limits shall be allowed only where the City makes a finding that it cannot feasibly provide water service. Such systems shall only be allowed to be used until such time as City water service becomes available.

PF-P-11 The City will develop and implement water conservation measures as necessary elements of the water system.

PF-P-12 The City shall continue to assess a water development fee on all new commercial, industrial, and residential development sufficient to fund systemwide capacity improvements. The water development fee schedule shall be periodically reviewed and revised as necessary.

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.

PF-P-14 The City shall continuously monitor water flows through the City's water system to identify areas of potential water loss and cases of under billing for water service and shall make improvements in the systems as necessary.

PF-P-15 The City shall monitor water quality regularly and take necessary measures to prevent contamination.

PF-P-16 The City of Manteca shall include a groundwater analysis as a technical analysis of water system capacity in the update of the Public Facilities Implementation Plan (PFIP), and shall prepare an environmental analysis in the PFIP that addresses the quality and availability of groundwater.

PF-P-17 The City of Manteca shall consider incremental increases in the demands on groundwater supply and water quality when reviewing development applications.

Implementation Measures

PF-I-2 The City shall update the Public Facilities Implementation Plan, regarding water supply and distribution, every five years. The update shall be reviewed annually for adequacy and consistency with the General Plan.

PF-I-3 The City shall require, as a condition of project approval, dedication of land and easements, or payment of appropriate fees and exactions, to help offset municipal costs of expansion of water treatment facilities and delivery systems.

PF-I-4. The City shall retain a water conservation ordinance requiring the installation of low-flush toilets, low-flow showerheads, and similar features in all new development.

PF-I-5 The City shall institute a remote monitoring program for the city's water system and replace faulty meters in the system as necessary. The City will continue the practice of identifying and replacing faulty meters at service connections on an ongoing basis.

PF-I-6 The City shall regularly monitor water quality in City wells and take remedial action as necessary.

PF-I-7 The City will encourage the use of recycled water for landscape irrigation where feasible, within the parameters of State and County Health Codes and standards.

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.

Goal RC-2. Maximize the beneficial uses of water by recycling water for irrigation and other non-potable uses.

Policies

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.

RC-P-2 The City shall explore potential uses of treated wastewater when such opportunities become available.

RC-P-3 The City shall protect the quantity of Manteca's groundwater.

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 sources.

RC-P-5 Development of private water wells within the city limits shall be allowed only where the City makes a finding that municipal water service is not readily and feasibly available, and such private well systems shall only be allowed to be used until such time as City water service becomes available.

Implementation Measures

RC-I-1 Continue to implement standards for water conserving landscape practices, including the use of drought tolerant plants, for both public and private projects.

RC-I-2 Continue efforts to increase public participation in water conservation.

RC-I-3 Require large commercial and industrial water users to submit a use and conservation plan as part of the project entitlement review and approval process, and develop a program to monitor compliance with and effectiveness of that plan.

RC-I-4 Cooperate with other agencies and jurisdictions to expand water conservation programs, and to develop methods of water reuse.

RC-I-5 Actively pursue the use of treated wastewater in irrigation and industrial applications, including development of appropriate infrastructure.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

The analysis in this section focuses on the nature and magnitude of the change in existing levels of water use compared with projected water use on the project site and the City's water service area. To determine potential impacts, water demands were estimated from demand projection calculations

and quantitative evaluation of data relative to the proposed project, along with existing land uses, approved projects, and proposed development. The primary resources used for this analysis include the following technical documents: *Water Supply Assessment for the Proposed Austin Road Business Park Development Project* and the *City of Manteca Urban Water Management Plan* (2005).

Water Demand Analysis

Water Code Section 10910 (c)(3) states "If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the WSA for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses."

The City prepared the WSA in November 2009 for the proposed project using technical information included in the City's UWMP which satisfies the documentation requirements of SB 610, CEQA 10583.5, and Water Code sections 10631, 10910, and 10912. The proposed project's water demand consists of potable and landscape irrigation demands. The proposed project's annual demand, as shown in Table 5.8-4 is estimated at 2,957.6 AFY and average annual day demand is estimated at 2.64 mgd. The estimated peak-hour demand plus a 15 percent redundancy for the development is 5,134 gpm.

The water demand is based on a gross residential demand of 0.474 gpm per single-family dwelling unit and 0.258 gpm for multi-family dwelling units. The gross demand is based on the City of Manteca's historical per capita water demand of 214 gallons per day. The use of the gross demand in the residential water supply planning allocates water for commercial, institutional, and industrial uses that serve the City.

A peak-to-average demand ratio of 2.8 is applied to the average demand to determine the peak hour demand. The peak hour demand is increased by 15 percent for water supply reliability. Table 5.8-4 provides a summary of the proposed project's water demand.

TABLE 5.8-4

AUSTIN ROAD BUSINESS PARK AND RESIDENTIAL DEVELOPMENT

Land Use	Dwelling Units/Square Footage	Average Day Demand (GPD)[a]	Maximum Day Demand (GPD)[b]	Peak Hour Demand (GPM)[c]	AFY
Single Family	2,358	1,850,897.95	3,701,796	3,599	2,073.3
Multiple Family	1,840	789,488.06	1,578,976	1,535	884.3
Commercial/Industrial[d]	8,195,000	~	~	~	~
Total		**2,640,386**	**5,280,772**	**5,134**	**2,957.6**

Notes:
a. Calculated demand based on gross residential demand of 0.474 gpm for single family dwelling units and 0.258 gpm for multiple family dwelling units.
b. Average Day to Maximum Day Demand is 2.0
c. Average Day to Peak Hour Ratio is 2.8

d. The City of Manteca calculates commercial and industrial demand as a factor of gross residential demand placed on Manteca's water supply system. (Personal Communication with Keith Conarroe, November 9, 2009.)
Source: WSA for Austin Road Business Park and Residential Development. Table 2, Austin Road Business Park Development Water Demand.

Standards of Significance

For the purposes of this EIR, impacts on water supply are considered significant if the proposed project would:

- Require or result in the construction of new water treatment or distribution facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Require new or expanded water entitlements and resources, if there are not sufficient water supplies available to serve the project from existing entitlements and resources.[11]

Project-Specific Impacts and Mitigation Measures

5.8-1 Implementation of the proposed project would require the construction of new or expanded water treatment or distribution facilities, the construction of which could cause significant environmental effects.

The proposed water distribution system for the proposed project would be developed in phases throughout the site with some initial off-site improvements required to connect to existing City infrastructure. These improvements are assumed as part of the proposed project and analyzed throughout this Draft EIR. Mitigation measures identified in this Draft EIR for potential adverse effects would also apply to off-site infrastructure improvements, where appropriate.

The average daily water demand for the City without the proposed project is 19,730,714 gpd with a supply of 25,617,000 gpd.[12] The proposed project's average daily water demand would be 2,640,386 gpd, which would make the City daily demand with the proposed project 22,371,100. The maximum day demand is 39,461,428 without the proposed project and 44,742,200 gpd with the project. Therefore, with an average daily supply of 25,617,000 and a maximum day supply of 51,234,000 gpd, there is sufficient water available from the existing and planned water sources to supply existing uses in addition to the proposed project on an annual basis. However, the WSA prepared for the proposed project states that there are insufficiencies in the City's water distribution system to meet the demand at the project site and in the City's service area under peak hour demand conditions. Without water system improvements, the proposed project's peak hour demand of 5,134 gpm would exceed the water systems peak hour distribution capacity. To mitigate this, the project would have to construct peaking facilities such as tanks, booster pumps, or wells sufficient to

11 This standard has been slightly modified from the text found in the 2009 CEQA Guidelines, Appendix G, for ease of comprehension.

12 City of Manteca. 2009. *Water Supply Assessment for the Austin Road Business Park and Residential Development*, December 7.

increase the systems overall peak distribution capacity by 5,134 gpm.[13] This would be a ***potentially significant impact***.

Mitigation Measure

The additional supply to meet peak hour demand can be provided by a combination of wells or storage, such as a 1 million gallon storage tank and booster pump station with a minimum capacity of 3,000 gpm, an upgrade to Well 26 booster tank storage to 1,500 gpm, and/or the addition of one or two new wells and treatment with a capacity of 1,500 gpm. Implementation of the following mitigation measure would reduce the impact to a ***less-than-significant level***. These additional facilities would be constructed either on the project site or in the corridors previously analyzed in this EIR for off-site improvements. If the facilities were to be constructed elsewhere, additional environmental analysis would be required.

5.8-1 *The project applicant shall construct peaking facilities such as tanks, booster pumps, or wells such that the system's distribution capacity can accommodate 5,134 gallons per minute. The method by which the capacity is achieved shall be approved by the City.*

5.8-2 Implementation of the proposed project would generate an additional demand for water, but would not require water supplies in excess of existing entitlements and resources, or result in the need for new or expanded entitlements.

As discussed above, the City has adequate water supplies to support existing demand in the City in addition to the proposed project under average daily and maximum day demand conditions. Water demand for current and proposed uses in the City of Manteca is 22,101 AFY. The City has a total supply of 28,695 AFY, leaving 6,594 AFY available. The proposed project's demand would be 2,958 AFY. Although not quantified in the City's WSA for the project, it should be noted that the existing water demand on the project site for irrigation would diminish as the site is developed, until all agricultural irrigation is ceased. As noted above, the current irrigation demand in the project site is roughly equal to the proposed project's estimated demand. Based on the information presented above, the proposed project would not result in the need for new or expanded entitlements and this would be a ***less-than-significant impact***.

Mitigation Measure

None required.

Cumulative Impacts

Cumulative development within the City, including the proposed project, would generate additional water demand. As shown in Table 5.8-1 the City of Manteca obtains its water supply from treated surface water from the SSJID, local groundwater, and a small amount of recycled water. The total supply from these sources is expected to be 22,286 AFY by 2015 and increase to 34,590 AFY by 2030. As shown in Table 5.8-3, the UWMP identifies demand in the City to be 21,641 AFY in 2015,

13 *Ibid.*

but would increase to 35,735 AFY by 2030. This would result in a shortfall of 1,145 AFY by 2030. The City may be able to reduce this shortfall through water saving measures, such as increased use of non-potable water for irrigation or improved water saving fixtures; however, it is unknown to what extent these measures could be implemented and thus reduce the shortfall of water supply. Because water supply with cumulative development cannot be fully mitigated, this would be a significant cumulative impact. The proposed project's water demand would be 2,958 AFY, which exceeds the 1,145 AFY shortfall in 2030. Therefore, the proposed project's contribution to the shortfall would be cumulatively considerable.

WASTEWATER

ENVIRONMENTAL SETTING

Municipal wastewater collection and treatment would be provided to the project area by the City of Manteca Sewer Division (MSD). The MSD operates the Manteca Wastewater Quality Control Facility (WQCF), a wastewater treatment facility located at 2450 West Yosemite Avenue in the City of Manteca. The WQCF provides service to the City of Manteca, City of Lathrop, and Raymus Village in San Joaquin County and currently treats approximately 6.5 mgd of wastewater, with a maximum capacity of approximately 9.87 mgd.[14] The WQCF is scheduled for a Phase IV upgrade of the wastewater treatment plant with construction to be completed in 2014. With the Phase IV upgrade, the WQCF will go from its current capacity of 9.87 mgd to 17.5 mgd.[15] A Phase V upgrade with a total capacity of 23.0 mgd is expected to serve a population of 145,000 in 2028 and beyond.[16]

The City's existing wastewater collection system is made up of gravity flow pipes ranging in diameter from 6- to 36-inches, 6- to 18-inch diameter force mains, and 11 wastewater pump stations.[17] Most of this system serves the City's "Central Shed," located in the center of the City, which is bound by State Route 120, Austin Road, Union Road, and Lathrop Road.[18] The proposed project is located within the "South Shed" located in the southern portion of the City as identified in the *City of Manteca Wastewater Collection System Master Plan Update*.[19] The proposed project site is not currently connected to a public wastewater collection system. Existing properties that generate wastewater within the proposed project site, dispose of their wastewater through individual private septic systems.

The closest existing wastewater facility to the proposed project is a 15 inch wastewater gravity pipe located in Woodward Avenue at the north end of the proposed project site. The capacity of the Woodward Avenue wastewater gravity pipe is currently limited due to incomplete downstream improvements. Developments that have been constructed over the last several years downstream of Austin Road have installed "interim" improvements in order to convey wastewater to the WQCF. The "interim" improvements consist of a series of pump stations and force mains.[20]

Initial phases of the proposed project would utilize an interim pump station and forcemain that would connect to existing downstream improvements in Woodward Avenue. The "interim" pump station would be designed to allow for a future conversion to a lift station. Several options have been indentified for the "interim" forcemain alignment and connection point. Later phases of development would require additional improvements to convey wastewater from Woodward Avenue

14 City of Manteca. *Utility information*. <www.ci.manteca.ca.us/pwt/util/index.asp>. (November 9, 2009).

15 City of Manteca. 2008. *Manteca Municipal Services Review.* June 16. p. 7.

16 *Ibid.*

17 Nolte Associates, Inc. 2006. *City of Manteca Wastewater Collection System Master Plan Update. Revised Draft.* August. p. 3-1.

18 *Ibid.,* Figure 2-1.

19 *Ibid.*

20 MacKay & Somps. 2008. *Austin Road Utility Master Plans*. December 10. p. 10.

to the WQCF. One option to increase the interim capacity in Woodward Avenue is to upgrade the Woodward Park pump station and forcemain system. Alternatively, the forcemain could be extended directly to the Tara Park pump station. At some point, there will be a capacity limitation from the Tara Park pump station to the WQCF. Interim improvements for the Tara Park pump station to the WQCF system could also be enhanced by including an upgrade to the pump and forcemain. The proposed project would also drain to an existing city gravity pipe in Woodward Avenue along the northern boundary of the proposed project. This would be contingent upon the completion of future downstream city improvements.

The construction of the proposed project is estimated to be completed in five different phases. In the event that the initial phase of development does not generate enough wastewater to effectively operate the collection system, a short term interim solution would be the use of a "pump and haul" system or a low flow pump system. The "pump and haul" system would require a manhole to be plugged at a point where a truck could pump out the wastewater and haul it to a point further downstream (i.e. a downstream manhole or directly to the WQCF). A low flow pump system could be implemented by installing a small temporary pump and a small diameter forcemain which would connect to a point further downstream.

The City of Manteca is currently working on an update to the Public Facilities Implementation Plan (PFIP), which would be used to improve and upgrade the City's wastewater collection system to accommodate the City's growth as projected in the General Plan. The City is currently evaluating the PFIP fee structure to assure that sufficient funds are generated from developments to pay for the various public improvements needed to serve the increased population and commercial activities.[21] The improvements to the wastewater collection system will enable the City to handle wastewater flows of 23.0 mgd which represents the amount of wastewater generated in the City at buildout of the 2023 General Plan (with a population estimate of 145,000 at year 2028).[22] The proposed project is part of the City of Manteca's General Plan and is part of the improvement plans. The interim system and forcemain for the proposed project would be designed to function with the PFIP.

REGULATORY SETTING

Federal Regulations

The discharge of treated wastewater is subject to the following federal requirements:

NPDES Permits

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the Clean Water Act (CWA) of 1972 to regulate municipal and industrial discharges to surface waters of the U.S. The discharge of wastewater to surface waters is prohibited unless an NPDES permit has been issued to allow that discharge. Each NPDES permit includes the following provisions: effluent

21 City of Manteca. 2008. *Manteca Municipal Services Review.* June 16. p. 7.

22 *Ibid.,* p. 6.

and receiving water limits of allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, and self-monitoring activities; and other regulatory requirements.

The wastewater discharge from the Manteca WQCF is regulated under a NPDES permit issued by the Regional Water Quality Control Board (RWQCB). To obtain the permit, the City of Manteca prepared a Report of Waste Discharge (RWD). The RWD includes information about the design and operation of the treatment plant (including the average and dry weather maximum flows for the plant), influent wastewater characteristics, and removal rates for specific water quality parameters. The NPDES permit and the Waste Discharge Requirements (WDR) are used to identify discharge prohibitions, effluent limitations, and monitoring and reporting requirements.

The discharge prohibitions and limitations in the permit are designed to ensure the maintenance of public health and safety, protection of receiving water resources, and safeguarding of designated beneficial uses of water bodies. Discharge limitations in the permit define allowable effluent concentrations for flow, biochemical oxygen demand (BOD), total suspended matter, residual chlorine, settleable matter, total coliform, oil and grease, and pH. Limitations also encompass mineralization and toxicity to aquatic life. The provisions provide stipulations for the disposal of solid materials, and limitations on impacts to receiving waters. The permit also specifies the sampling, monitoring, and reporting requirements for compliance with waste discharge regulations. The monitoring program entails sampling influent, effluent, and the receiving water. The provisions of the NPDES permit and the WDR are enforceable through an order issued by the RWQCB or civil action.

Title 40 of the Code of Federal Regulations (CFR), Part 503 and Part 258, serves as the basis for the RWQCB requirements for biosolids disposal by land application or in a landfill. Title 27 of the CCR and standards established by the RWQCB in a General Order for the disposal of biosolids regulate the disposal of biosolids.

Title 40 of the CFR, Parts 405 through 471, contains the Federal Categorical Pretreatment Standards for the pretreatment of industrial wastes discharged to publicly owned treatment works, such as the WQCF.

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act[23] is California's statutory authority for the protection of water quality. Under the Porter-Cologne Act, the State must adopt water quality policies, plans, and objectives that will provide protection to the State's waters for the use and enjoyment of the people of California. In California, the State Water Resources Control Board (SWRCB) has authority and responsibility for establishing policy for water quality control issues for the State. The SWRCB delegates regional authority for planning, permitting, and enforcement to the nine RWQCB. The

23 California Water Code Section 13000 *et seq*.

Porter-Cologne Act authorizes the SWRCB and RWQCB to issue NPDES permits and WDRs containing WDRs, and to enforce these permits. SWRCB and RWQCB regulations implementing the Porter-Cologne Act are included in Title 27 of the CCR. Regional water quality requirements, criteria, and prohibitions are found in the Regional Water Quality Control Plan or "Basin Plan."

Regional Water Quality Control Board

Under the Central Valley Regional Water Quality Control Board (CVRWQCB) NPDES permit system, all existing and future municipal and industrial discharges to surface waters within the City would be subject to regulation. NPDES permits are required for operators of municipal separate storm sewer systems, construction projects, and industrial facilities. These permits contain limits on the amount of pollutants that can be contained in each facility's discharge.

Local Regulations

City of Manteca General Plan

The City of Manteca Public Facilities and Services Element is applicable to wastewater and the proposed project. Applicable goals and policies of this Element include the following:

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.

Policies

PF-P-18 Ensure wastewater collection and treatment for all development in the City and the safe disposal of wastes.

PF-P-19 The City will maintain capacity to process combined residential, commercial, and industrial flow.

PF-P-20 The City shall develop new sewage treatment and trunk line capacity as necessary to serve new development.

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.

PF-P-22 Development of individual septic systems may be allowed only where the City makes a finding that it cannot feasibly provide public sewer service, and such systems shall only be used until such time as City sewer service becomes available. Such systems shall meet the minimum standards of the San Joaquin County Health Department.

PF-P-23 The City shall establish and maintain a growth management plan to ensure the development of a balanced mix of residential, commercial, industrial, and public land uses.

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.

PF-P-25 The City will maintain the ability to handle peak discharge flow while meeting State Regional Water Quality Control Board Standards as established in the current NPDES Permit.

Implementation Measures

PF-I-8 The City shall update the Public Facilities Implementation Plan regarding wastewater collection and treatment every five years. The update shall be reviewed annually for adequacy and consistency with the General Plan.

PF-I-9 The City will require all sewage generators within its service area to connect to the City's system, except those areas where on-site treatment and disposal facilities are deemed appropriate.

PF-I-10 The City will encourage and permit an industrial pretreatment program for business parks and other industrial uses in accordance with state and federal requirements.

PF-I-11 The City will investigate methods of improving the quality of the effluent from the City plant and will investigate options for reuse of treated wastewater. The recycled wastewater will be used for irrigation of public recreation lands, restoration of wetland areas, and irrigation of landscaped areas.

PF-I-12. The City will promote reduced wastewater system demand through efficient water use by:

- requiring water conserving design and equipment in new construction,
- encouraging retrofitting with water conserving devices,
- designing wastewater systems to minimize inflow and infiltration to the extent economically feasible; and
- maintaining a Citywide map of all sewer collection system components and monitoring the condition of the system on a regular basis.

City of Manteca Municipal Code

The *City of Manteca Municipal Code,* Title 13 (Public Services) chapter 13.12 (Sewer Connection Charges), chapter 13.14 (Sewer Capacity Charges) and chapter 13.16 (Sewer Service Charges) contains regulations associated with sewer management.

Title 13 (Public Services), Public Facilities Implementation Program Fees), Section 13.38.050 (Establishment of a Sewer Fee) requires developers of property to pay a sewer facilities development fee.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

Water use and wastewater flows are related. In general, wastewater is generated from indoor water uses, such as toilets, as well as industrial discharges, and those from restaurant operations. To determine the amount of wastewater that would be generated by the proposed project, the land uses of the proposed project are compared to wastewater generation factors shown in Table 5.8-5. Estimated wastewater generated by the project is then compared to the estimated future capacity of the sewer lines and the water treatment plants to determine whether sufficient capacity exists and/or there is the need for additional wastewater conveyance or treatment systems.

TABLE 5.8-5

WASTEWATER GENERATED FROM THE PROPOSED PROJECT

Land Use	Wastewater Generation Rates	Proposed Project	
		Units	Wastewater Generated
High-Cube Warehouse	0.02 gpd/sf[1]	4,465,000 sf	89,300 gpd
Light Industrial	0.08 gpd/sf[1]	1,523,000 sf	121,840 gpd
Office Park	0.15 gpd/sf[1]	294,000 sf	44,100 gpd
Mini-Storage	0.02 gpd/sf[1]	203,000 sf	4,060 gpd
Shopping Center	0.08 gpd/sf[1]	1,588,000 sf	127,040 gpd
Residential	265 gpd/unit[2]	4,198du	1,112,470 gpd
		Total	**1,498,810 gpd 1.5 mgd**

Sources:
1. City of Los Angeles. 1998. Draft LA CEQA Threshold Guideline. Exhibit K.2-11 (Sewage Generation Factors). May 14. pp. K.2-20 to K.2-25.
2. City of Manteca, 2008. Manteca Municipal Services Review. June 18. p. 6.

Standards of Significance

For the purposes of this EIR, impacts on wastewater systems are considered significant if the proposed project would:

- Exceed wastewater treatment requirements of the applicable RWQCB;
- Require or result in the construction of new wastewater treatment and conveyance facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.[24]

Project-Specific Impacts and Mitigation Measures

5.8-3 Implementation of the proposed project would not exceed wastewater treatment requirements of the Central Valley Regional Water Quality Control Board.

As stated above, the NPDES permit system requires that all existing and future municipal and industrial discharges to surface waters within the City be subject to specific discharge requirements. The proposed project would not result in the direct discharge of wastewater to any surface water. Instead, operational discharges would connect to the project's future sewer system, which would ultimately be conveyed to and treated at the WQCF. The WQCF is required to comply with its associated WDRs. WDRs set the levels of pollutants allowable in water discharged from a facility.

Compliance with any applicable WDRs, as monitored and enforced by the CVRWQCB, would ensure that the proposed project would not exceed the applicable wastewater treatment

24 This standard has been slightly modified from the text found in CEQA Guidelines, Appendix G, for ease of comprehension.

requirements of the CVRWQCB with respect to discharges to the sewer system. This would result in a ***less-than-significant impact***. No mitigation measures are required.

Mitigation Measure

None required.

5.8-4 Implementation of the proposed project would require new sewer connections and could result in the construction of new or expanded wastewater conveyance system.

The proposed project site is currently not connected to a public wastewater collection system and the existing local wastewater collection lines are not adequate to meet the requirements of the proposed project. The project developer(s) would be responsible for constructing new sewer connections and extensions to serve the proposed project. Currently, the closest existing wastewater facility to the proposed project is a 15 inch wastewater gravity pipe located in Woodward Avenue at the north end of the project site. The capacity of the Woodward Avenue wastewater gravity pipe is currently limited due to incomplete downstream improvements. The proposed project would construct a series of pump stations and force mains to connect to the existing systems that convey wastewater from Woodward Avenue to the WQCF.

As discussed under the Environmental Setting section above, the City of Manteca is currently updating the PFIP. The PFIP would be used to improve and upgrade the City's wastewater collection system to accommodate the City's growth as projected in the General Plan to enable the City to handle wastewater flows of 23.0 mgd, which represents the amount of wastewater generated in the City at buildout of the 2023 General Plan (with a population estimate of 145,000 at year 2028).[25] The proposed project was assumed in development projections in the City's municipal services review for wastewater generation.[26]

The interim system and forcemain for the proposed project would be designed to function with the PFIP. As discussed under the Environmental Setting section above, initial phases of development for the proposed project would utilize an interim pump station and forcemain that would connect to existing downstream improvements in Woodward Avenue. The proposed project would also connect to an existing city gravity pipe in Woodward Avenue along the northern boundary of the proposed project. In the event that the initial phase of development does not generate enough wastewater to effectively operate the collection system, a short term interim solution would be the use of a "pump and haul" system or a low flow pump system. Later phases of development would require additional improvements to convey wastewater from Woodward Avenue to the WQCF. Construction of these off-site improvements, shown in Figure 2-7 in Chapter 2, Project Description, is assumed as part of this Draft EIR. The developer could pay full mitigation fees for the necessary wastewater improvements, per City of Manteca Municipal Code Section 13.38.050, or could construct the improvements and be reimbursed by the City.

25 City of Manteca. 2008. *Manteca Municipal Services Review.* June 16. p. 6.

26 *Ibid.,* p. 26.

Infrastructure fees are designed to represent the fair share of the new development toward the cost of planned (future) utilities. In addition, as specified in the City of Manteca Municipal Code, Title 13 (Public Services), Chapter 13.12 (Sewer Service Charges), requires monthly payment for customers of the city's sanitary sewer collection and treatment system. The City also requires each residential dwelling utilizing WQCF Phase III wastewater treatment capacity and each commercial, industrial, and institutional facility to pay a sewer connection charge as specified in the City of Manteca Municipal Code, Title 13 (Public Services), Chapter 13.12 (Sewer connection Charges), Sections 13.12.030 through 13.12.055.

Adherence to existing laws and regulation would ensure that the construction of new wastewater conveyance structures would not result in significant impacts. Therefore, the proposed action would result in a ***less-than-significant impact*** to wastewater treatment and conveyance facilities.

Mitigation Measure

None required.

5.8-5 Implementation of the proposed project would not increase wastewater generation such that treatment facilities would be inadequate to serve the project's projected demand in addition to the provider's existing commitments.

The WQCF currently treats approximately 6.5 mgd of wastewater and has a maximum capacity of approximately 9.87 mgd.[27] Table 5.8-5 (Wastewater Generated from the Proposed Project) estimates the proposed project would generate approximately 1,498,810 gpd (1.5 mgd). Wastewater generated from the proposed project would increase wastewater treatment demand by 23 percent from the current 6.5 mgd treated at the WQCF. The WQCF currently has capacity to accommodate the increase of wastewater from the proposed project. With the proposed project, the WQCF would treat approximately 8 mgd; however, it should be noted that demand from the proposed project would grow incrementally as phases of the project are constructed and come on line.

Phase IV upgrades to the wastewater treatment plant, scheduled to be completed in 2014, would increase its current capacity of 9.87 mgd to about 17.5 mgd.[28] In addition, the City plans for a Phase V upgrade of the WQCF to increase capacity to 23.0 mgd, which is expected to serve a population of 145,000 in 2028 and beyond. Funding for the project will likely be a combination of User Service Charges, Development Impact Mitigation Fees, Revenue Anticipation Notes (RANS), a Low Interest State Revolving Loan, or some other form of public debt instrument.[29]

The planned increase in the capacity of the WQCF would ensure adequate capacity to accommodate the increase of wastewater produced by the proposed project and would not require any additional construction or expansion of wastewater treatment facilities to serve the project's needs. In addition, the proposed project would be required to adhere to existing laws and regulations

27 City of Manteca. *Utility information*. <www.ci.manteca.ca.us/pwt/util/index.asp>. (November 9, 2009).

28 City of Manteca. 2008. *Manteca Municipal Services Review.* June 16. p. 7.

29 *Ibid.*

associated with wastewater discharge and treatment requirements. Therefore, the project's impacts on wastewater treatment facilities are also considered ***less than significant***. No mitigation measures are required.

Mitigation Measure

None required.

Cumulative Impacts

The CVRWQCB, in connection with the implementation of the NPDES program, has imposed requirements on the treatment of wastewater and its discharge into local water bodies. As discussed above, the WQCF is required to comply with WDRs, which establish the levels of pollutants allowable in water discharged from a facility. As discussed above, the City of Manteca is currently updating the PFIP, which includes improvements to the wastewater collection system that will enable the City to handle wastewater flows of 23.0 mgd by 2028 (Phase V). The City would be required to obtain and comply with a NPDES permit for this increased level of wastewater generated by cumulative growth in the WQCF service area (the City of Manteca, a portion of the City of Lathrop, and Raymus Village in San Joaquin County). Compliance with applicable WDRs, as monitored by the City, would ensure that the WQCF would not exceed wastewater treatment requirements of the CVRWQCB. Therefore, this would be a *less-than-significant* cumulative impact.

Cumulative growth in the service area could result in the need for additional conveyance infrastructure, and due to the continually developing nature of the service area, it is expected that such expansion of conveyance infrastructure could result in significant cumulative environmental effects. The City of Manteca is updating the PFIP to improve and upgrade the City's wastewater collection system to accommodate the City's growth as projected in the General Plan. Future development projects would be required to mitigate their individual impacts on wastewater treatment facilities, by construction of facilities or through payment of fees to upgrade the wastewater system. Future development in the City would not result in a cumulative impact because there is sufficient capacity planned for the wastewater treatment plant to accommodate cumulative growth. Per Section 13.38.050 (Establishment of a Sewer Fee) of the City's Municipal Code, future projects would be required to pay fees and develop construction schedules that would ensure that there is adequate capacity in the wastewater system as development occurs. Development of cumulative projects within the City's service area would generate additional wastewater and contribute to the overall demand for wastewater treatment. WQCF currently treats approximately 6.5 mgd of wastewater, and has been rated with a capacity of approximately 9.877 mgd.[30] Improvements to the Manteca sewer system are currently underway. It is expected that the plant will go from its current capacity of 9.87 mgd up to about 17.5 mgd (Phase IV), which would serve a population of approximately 130,000, as well as commercial and industrial users. Phase V would serve a population of 145,000 in 2028 and beyond.[31] Because the City has plans in place to expand

30 City of Manteca. *Utility information*. <www.ci.manteca.ca.us/pwt/util/index.asp>. (November 9, 2009).

31 City of Manteca. 2008. *Manteca Municipal Services Review.* June 16. p. 7.

treatment capacity to serve cumulative development in the City, this is considered to be a *less-than-significant* cumulative impact.

STORM DRAINAGE

ENVIRONMENTAL SETTING

Currently, majority of the proposed project site is utilized for agricultural purposes. The terrain is essentially flat with a slight fall from east to west. The soil conditions are highly pervious and consist primarily of sand and silt. Given these conditions, the majority of stormwater that falls on the site percolates into the ground. A few properties within the plan area contain localized ditches and basins which empty by percolation and evaporation.[32] Storm drain facilities currently exist in Woodward Avenue at the north end of the project site, but capacities in these facilities are limited due to incomplete downstream improvements. South San Joaquin Irrigation District (SSJID) facilities exist throughout the project site. The facilities are primarily "laterals" utilized to deliver irrigation water to specific properties. However, some facilities serve a dual purpose and are also utilized to convey stormwater runoff to the San Joaquin River.

The City updated its Storm Drain Master Plan (SDMP) in May 2006.[33] The policies and criteria in the SDMP set minimum standards for the design of storm drainage conveyance, retention facilities, and drainage pump stations. Storm drain design must comply with the City's SDMP. The SDMP requires drainage studies to be submitted to and accepted by the Public Works Department prior to completion of a tentative subdivision or parcel map.

The SDMP requires all new development to provide drainage plans demonstrating new projects do not adversely affect adjacent properties and allow all properties in a given watershed an appropriate means of discharging surface runoff. The City's storm drainage design standards require that all development projects, regardless of size, prepare a drainage report, which shall include maps showing drainage basins relative to the project and project sub-basins, with catch inlet locations and calculations of design runoff before and after development. The report must also include hydraulic calculations for depth of flow and quantity of runoff, pipe sizing, pump stations, and detention/retention basins.

The City of Manteca is currently working on an update to the PFIP, which would be used to improve and upgrade the City's stormwater drainage system to accommodate the City's growth as projected in the General Plan. The City is currently evaluating the PFIP fee structure to assure that sufficient funds are generated from developments to pay for the various public improvements needed to serve the increased population and commercial activities.[34] The proposed project site is assumed for development in the City of Manteca's General Plan and would be subject to all applicable fees for stormwater improvements.

32 MacKay & Somps. 2008. *Austin Road Utility Master Plans*. December 10. p. 6.

33 West Yost Associates. 2006. *Storm Drain Master Plan, City of Manteca*, May.

34 City of Manteca. 2008. *Manteca Municipal Services Review.* June 16. p. 7.

REGULATORY SETTING

Federal Regulations

Clean Water Act (CWA)

The CWA was enacted with the primary purpose of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters. The CWA also directs states to establish water quality standards for all "waters of the United States" and to review and update such standards on a triennial basis. Other provisions of the CWA related to basin planning include Section 208, which authorizes the preparation of waste treatment management plans, and Section 319, which mandates specific actions for the control of pollution from nonpoint sources. The US EPA has delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the NPDES Program, to the SWRCB and the RWQCB.

National Pollutant Discharge Elimination System (NPDES). The NPDES permit system was established in the CWA to regulate both point source discharges (a municipal or industrial discharge at a specific location or pipe). Nonpoint sources are diffuse discharges that originate over a wide area rather than from a definable point. Nonpoint pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that the US EPA must consider in setting effluent limits for priority pollutants.

A detailed discussion of the NPDES program is provided under the State Regulatory programs section because the authority to implement the NPDES program was delegated to the SWRCB and RWQCBs. Please also see discussion of NPDES permits under Regulatory Setting for wastewater.

State Regulations

Responsibility for the protection of water quality in California rests with the SWRCB and nine RWQCBs. The SWRCB establishes statewide policies and regulations for the implementation of water quality control programs mandated by federal and state water quality statutes and regulations. The RWQCBs develop and implement Water Quality Control Plans (Basin Plans) that consider regional beneficial uses, water quality characteristics, and water quality problems. In cases where the Basin Plan does not contain a standard for a particular pollutant, other criteria are used to establish a standard. Other criteria may be applied from SWRCB documents (e.g., the Inland Surface Waters Plan (ISWP) and the Pollutant Policy Document, or the California Toxics Rule) or from US EPA water quality criteria developed under Section 304(a) of the CWA. Numeric criteria are required by the CWA for many priority toxic pollutants. However, in 1994, a state court overturned the state's water quality control plans containing water quality criteria for priority toxic pollutants. To fill in the gap between the water quality control plans and CWA requirements, on May 18, 2000, the US EPA promulgated the California Toxics Rule based on the Administrator's determination that numeric criteria are necessary in the State of California to protect human health and the

environment. These federal criteria are numeric water quality criteria for priority toxic pollutants and other provisions for water quality standards legally applicable in the State of California for inland surface waters, enclosed bays, and estuaries for all purposes and programs under the CWA.

All projects resulting in discharges, whether to land or water, are subject to Section 13263 of the California Water Code and are required to obtain approval of WDRs by the RWQCBs. Land and groundwater-related WDRs (i.e., non-NPDES WDRs) regulate discharges of privately or publicly treated domestic wastewater and process and wash-down wastewater. WDRs for discharges to surface waters also serve as NPDES permits, which are further described below.

Porter-Cologne Water Quality Control Act

The *Porter-Cologne Water Quality Control Act* establishes the SWRCB and each RWQCB as the principal state agencies for coordinating and controlling water quality in California. Specifically, the *Porter-Cologne Water Quality Control Act* authorizes the SWRCB to adopt, review, and revise policies for all waters of the state (including both surface and groundwaters) and directs the RWQCBs to develop regional Basin Plans. Section 13170 of the California Water Code also authorizes the SWRCB to adopt water quality control plans on its own initiative.

The RWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction. Water quality objectives are specified in the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan), which was prepared by the CVRWQCB in compliance with the CWA and the *Porter-Cologne Water Quality Control Act*. The principal elements of the Basin Plan are a statement of beneficial water uses protected under the plan; water quality objectives necessary to protect the designated beneficial water uses; and strategies and time schedules for achieving the water quality objectives. The water quality objectives are achieved primarily through the establishment and enforcement of WDRs. Because the project site is located within the CVRWQCB's jurisdiction, all discharges to surface water or groundwater are subject to the Basin Plan requirements.

Waste Discharge Requirements. The *Porter-Cologne Water Quality Control Act* provides that "All discharges of waste into the waters of the State are privileges, not rights." Furthermore, all dischargers are subject to regulation under the *Porter-Cologne Water Quality Control Act*, including both point and nonpoint source dischargers. In obligating the SWRCB and RWQCBs to address all discharges of waste that can affect water quality, including nonpoint sources, the legislature provided the SWRCB and RWQCBs with administrative permitting authority in the form of administrative tools (WDRs, waivers of WDRs, and basin plan prohibitions) to address ongoing and proposed waste discharges.

California Water Code, Section 13260. Section 13260 states that persons discharging or proposing to discharge waste that could affect the quality of waters of the state, other than into a community sewer system, shall file a RWD containing information that may be required by the appropriate RWQCB. The RWQCBs have primary responsibility for issuing WDRs. The RWQCBs may issue individual WDRs to cover individual discharges or general WDRs to cover a category of

discharges. WDRs may include effluent limitations or other requirements that are designed to implement applicable water quality control plans, including designated beneficial uses and the water quality objectives established to protect those uses and prevent the creation of nuisance conditions.

For discharges into surface waters, an NPDES permit application must be filed with the appropriate Regional Board. For other types of discharges, such as those affecting groundwater a RWD must be filed with the appropriate Regional Board in order to obtain WDRs. The SWRCB also can issue general WDRs under specific conditions. The RWQCB must then determine the appropriate action to take, either issuing WDRs to the discharger, or conditionally waiving the requirements. WDRs can prohibit the discharge of waste or certain types of waste, either under specific conditions or in specified areas.

Violations of WDRs may be addressed, for example, by issuing Cleanup and Abatement Orders (CAOs), Cease and Desist Orders (CDOs), assessing administrative civil liability, or seeking imposition of judicial civil liability or judicial injunctive relief.

Inland Surface Water Quality Standards. The SWRCB has developed water quality objectives for inland surface waters through the 1991 ISWP. Included among the provisions of these objectives are: that all point and nonpoint discharges must comply with identified water quality objectives; and that effluent limits are to be imposed, either through NPDES permits or WDRs, such that the water quality objectives shall not be exceeded in the receiving water outside a designated mixing zone. The more stringent objectives, either the ISWP or the Basin Plan, are applied to discharges that contain priority pollutants.

TMDLs. States are required to assess waters for impairment every two years and develop Total Maximum Daily Loads (TMDLs) for waterbodies listed as impaired on the 303(d) list as approved by the US EPA. The current approved 303(d) list is the 2006 list, partially approved by the US EPA in 2006. This partial approval reserves the right for the US EPA to add additional water bodies or pollutants to the impaired waters list. The 303(d) list includes the pollutant(s) contributing to impairment, sources of impairment, and a completion date for development of TMDLs. In California, the SWRCB has interpreted state law (*Porter-Cologne Water Quality Control Act*, *California Water Code* Section 13000 et seq.) to require that implementation be addressed when TMDLs are incorporated into Basin Plans (water quality control plans). The *Porter-Cologne Water Quality Control Act* requires each Regional Board to formulate and adopt water quality control plans for all areas within its region. It also requires that a program of implementation be developed that describes how water quality standards will be attained. TMDLs can be developed as a component of the program of implementation, thus triggering the need to describe the implementation features, or alternatively as a Water Quality Standard. When the TMDL is established as a standard, the program of implementation must be designed to implement the TMDL. Typically a revision to the program of implementation is needed whenever a new standard is adopted.

General Construction Permit. Prior to beginning any construction activities, the permit applicant must obtain coverage under the General Construction Permit by preparing and submitting a Notice of Intent (NOI) and appropriate fee to the SWRCB. Additionally, coverage would not occur until an

adequate Stormwater Pollution Prevention Plan (SWPPP) has been prepared. A separate NOI is submitted to the SWRCB for each construction site.

The SWRCB permits all regulated construction activities under NPDES General Permit for Storm Water Discharges Associated with Construction Activity (Order No.2009-0009-DWQ, NPDES No. CAR000002) adopted September 2, 2009. Every construction project that disturbs one or more acres of land surface or that is part of a common plan of development or sale that disturbs more than one acre of land surface would require coverage under this Construction General Permit by July 1, 2010. To obtain coverage, the landowner or other applicable entity must file Permit Registration Documents (PRDs) prior to the commencement of construction activity, which include filing a NOI, preparing and implementing a SWPPP, submit other documents required by this Construction General Permit, and mail the appropriate permit fee to the SWRCB. All development projects in accordance with the proposed project that disturb one or more acres or if the construction activity is part of a larger common plan of development that encompasses one or more acres of soil disturbance, or if there is significant water quality impairment resulting from the activity, would be required to comply with the revised Construction General Permit unless a Notice of Termination is filed prior to July 1, 2010.

The current Construction General Permit differs from the previous one (Order No. 98-08-DWQ) in that it includes specific minimum requirements for construction stormwater quality BMPs, a determination of sediment Risk Level, a Rain Event Action Plan, and monitoring and reporting requirements. Risk levels are based on a matrix of project sediment risk and receiving water risk. Sediment risk is based on estimated soil loss, as calculated by the Revised Universal Soil Loss Equation (RUSLE). Receiving water risk is based on whether a project drains to a sediment-sensitive waterbody. A sediment-sensitive waterbody is either on the most recent Section 303d list for waterbodies impaired for sediment; has an US EPA-approved TMDL implementation plan for sediment; or has the beneficial uses of cold freshwater habitat, fish spawning, and fish migration. Because the City discharges to waters with beneficial uses of fish spawning and fish migration, development in accordance with the proposed project would be at least a Risk Level 2 project subject to Numeric Action Levels and some additional monitoring requirements. If erosion potential is high, it may be a Risk Level 3 project and subject to Numeric Effluent Limits and more rigorous monitoring requirements such as receiving water monitoring and in some cases bioassessment.

Best management practices (BMPs) are intended to reduce impacts to the Maximum Extent Practicable (MEP), a standard created by Congress to allow regulators the flexibility necessary to tailor programs to the site-specific nature of municipal stormwater discharges. Regulations do not define a single MEP standard, but reducing impacts to the MEP generally relies on BMPs that emphasize pollution prevention and source control, with additional structural controls, as needed.

Local Regulations

City of Manteca General Plan

The City of Manteca Public Facilities and Services Element is applicable to storm drainage and the proposed project. Applicable goals and policies of this Element include the following:

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.**

Policies

PF-P-26 The City shall continue to complete gaps in the drainage system in areas of existing development.

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.

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.

Implementation Measures

PF-I-13 The City shall update the Storm Drainage Master Plan and Public Facilities Implementation Plan, regarding water supply and distribution, every five years. The update shall be reviewed annually for adequacy and consistency with the General Plan.

City of Manteca Municipal Code

Title 13 (Public Services) Chapter 13.28 (Stormwater Management and Discharges) establish minimum storm water management requirements and controls. The objectives are to 1) minimize increases in storm water runoff from any development in order to reduce flooding, siltation and stream bank erosion and maintain the integrity of drainage channels; 2) minimize increases in non-point source pollution caused by storm water runoff from development that would otherwise degrade local water quality; 3) 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 MEP; and 4) reduce storm water runoff rates and volumes, soil erosion and non-point source pollution wherever possible, through storm water management controls and to ensure that these management controls are properly maintained and pose no threat to public safety.

Title 13 (Public Services), Public Facilities Implementation Program Fees), Section 13.38.060 (Establishment of a Storm Drainage Fee) requires developers of property to pay a storm drainage facilities development fee.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

The proposed project would change the land use in the project site from undeveloped or agricultural to residential, industrial, and commercial/business. The changes in land use would result in changes in the topography and an increase in impervious surfaces. Consequently, the proposed project would also alter runoff from a storm event through changes in infiltration rates of incident rainfall and concentration of runoff into conveyance facilities such as gutters and pipes. For example, an increase in impervious area from a change in land use would result in higher runoff quantities that would flow faster to gutters and drain pipes than as overland flow from undeveloped land. To determine whether implementation of the proposed project would result in impacts on stormwater drainage, the changes in drainage as a result of the proposed project were compared with the existing stormwater drainage patterns and infrastructure to determine if the project would require the construction of stormwater drainage facilities beyond those assumed in the proposed project and the City's SDMP.

Standards of Significance

For the purposes of this EIR, impacts related to storm water are considered significant if the proposed project would:

- 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.

Project-Specific Impacts and Mitigation Measures

5.8-6 Implementation of the proposed project would require the construction of new stormwater drainage facilities and the expansion of existing facilities.

As stated in the environmental setting, the project site is currently under agricultural production. Based on existing low-intensity land uses, the stormwater flows are expected to increase significantly with the development of higher-intensity land uses. Given that the project site is currently undeveloped and permeable, the proposed project would increase the rate of surface runoff from the project site.

As discussed above, the SWRCB permits all regulated construction activities under NPDES General Permit for Storm Water Discharges Associated with Construction Activity. Every construction project that disturbs one or more acres of land surface or that is part of a common plan of development or sale that disturbs more than one acre of land surface would require coverage under this Construction General Permit. To obtain coverage under the Permit, the landowner or other applicable entity must prepare a SWPPP with specific minimum requirements for construction

stormwater quality BMPs, a determination of sediment Risk Level, a Rain Event Action Plan, and monitoring and reporting requirements. Implementation of BMPs that emphasize pollution prevention and source control would reduce impacts related to construction runoff.

Currently, there are no existing stormwater drainage facilities to support the project site. The drainage system for the proposed project is shown in Figure 2-6 (Chapter 2, Project Description). The storm drain collection system proposed for the project would be compatible with existing and future expected development patterns. The project site is divided for drainage purposes into four watersheds. Three watersheds, Sheds A, B and C, would drain to a pump station that would lift or pump water into an existing SSJID pipeline (Lateral 'W') along the southern boundary of the site. These sheds are not expected to require any improvements downstream of the connection point to Lateral 'W'. One watershed, Shed D, would drain to an existing city gravity pipe in Woodward Avenue along the northern boundary of the site. Development of Shed D is contingent upon the completion of future downstream city improvements. The drainage system would consist of gravity lines, detention basins, pump stations, a Supervisory Control and Data Acquisition (SCADA) system, monitoring wells, and a gravity outfall line that would lead from the basins to an existing downstream gravity system. The proposed detention basins would be sized to hold an entire 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. The City would review the drainage plan to ensure consistency with the SDMP.

As noted above, the developer would be required to pay full mitigation fees of all impacts of the proposed project on utilities, including stormwater drain facilities per *City of Manteca Municipal Code*, Section 13.38.060 (Establishment of a Storm Drainage Fee). These fees are designed to represent the fair share of the new development toward the cost of planned (future) utilities. Compliance with the City's SDMP and payment of applicable fees for storm drainage infrastructure would ensure that additional storm drainage facilities are not needed and impacts on storm drainage would remain ***less than significant***.

Mitigation Measure

None required.

Cumulative Impacts

Development of cumulative projects within the City would generate additional stormwater runoff as previously pervious land is converted to impervious surfaces. However, like the proposed project, all future development projects would be required to implement BMPs to reduce runoff created as a result of development. Because development projects would be required to include BMPs to reduce stormwater runoff, in compliance with local codes and NPDES permit requirements, the cumulative impact would be *less than significant*.

As discussed above, developers of projects within the City of Manteca would be required to pay mitigation fees toward any required stormwater drain facilities per City of Manteca Municipal Code. These fees are designed to represent the fair share of the new development toward the cost of planned utilities. In addition, all drainage improvements are subject to the approval of the City to ensure compliance with the City's SWMP, which would reduce effects related to changes in stormwater due to development. All cumulative development, including the proposed project, would pay development impact fees to fund stormwater drainage facilities, and therefore, future growth within the City would have an overall cumulative impact that is *less than significant*.

SOLID WASTE

ENVIRONMENTAL SETTING

The City of Manteca Solid Waste Division (SWD) provides solid waste hauling service for the City of Manteca and would serve the proposed project site.[35] The SWD consists of 36 employees, including a SWD Superintendent, yard personnel, office staff, and recycling coordinators. SWD's services range from residential and commercial trash pick-up; residential and commercial recycling pick-up, green waste pick-up, and hazardous waste collection.[36]

Residential trash is picked up weekly in brown toters. Residents may choose the size of the trash collection toter (32 gal, 64 gal or 96 gal) and the prices based upon the size. Drivers operate fully automated and semi-automated side loaders on the residential trash routes.[37] Residential recycling and green waste are each picked up bi-weekly on alternating weeks.[38]

Household Hazardous Wastes, such as paint, oil, antifreeze, pool chemicals, fertilizers, batteries, cleaning products or any other household products, can be taken to the San Joaquin County Hazardous Waste Facility located at 7850 Bridgeford St, Stockton.[39] The SWD accepts E-wastes such as computers, printers and TV's at the Manteca Solid Waste Office at 210 E. Wetmore and the Lovelace Transfer Station. In addition, the City of Manteca holds E-waste collection events in April and October for the City residents.[40]

Commercial size containers ranging from 2 cubic yard to 6 cubic yard are available for commercial trash. Larger drop box containers from 10 cubic yards to 40 cubic yards are also available. Drivers operate front-loaders and rear loaders on commercial trash pickup routes.[41] SWD also provides commercial recycling to businesses and can arrange pick up service once a week up to 5 times per week, depending on the needs of the business. Commercial recycling bins are for co-mingled recycling.[42] Co-mingled recycling allows materials to be mixed in one container and then sorted after the hauler takes the materials to a sorting facility where the materials are separated for recycling. The City of Manteca does not have a sorting facility; however, the solid waste transferred to the Forward Landfill is sorted on site.[43] SWD provides commercial green waste services with

35 City of Manteca, Solid Waste Division, personal communication, November 4, 2009.

36 City of Manteca. *Solid Waste Division*. <www.ci.manteca.ca.us/pwt/swdiv/index.asp> (November 4, 2009).

37 *Ibid.*

38 City of Manteca. *Residential Recycling*. <www.ci.manteca.ca.us/pwt/swdiv/rrecycling.asp>, (November 4, 2009).

39 City of Manteca. *Household Hazardous Waste.* <www.ci.manteca.ca.us/pwt/swdiv/hazwaste.asp> (November 4, 2009).

40 *Ibid.*

41 City of Manteca. *Solid Waste Division*. <www.ci.manteca.ca.us/pwt/swdiv/index.asp>, (November 4, 2009).

42 City of Manteca. Commercial Recycling. <www.ci.manteca.ca.us/pwt/swdiv/crecycling.asp>, (November 4, 2009).

43 Joe Griffith, Forward Landfill, personal communication, December 2, 2009, 10:51 am.

green waste bins ranging in size from 2 cubic yards to 4 cubic yards. Similar to recycling pick up service, green waste can be arranged to be picked up once a week or up to 5 times per week.[44]

As of 2006,[45] the City of Manteca maintained a 38 percent diversion rate, which does not meet the AB 939 requirement of 50 percent diversion of solid waste by the Year 2000.[46] The City has disposed of 61,074 tons of solid waste to landfills in 2008.[47] The majority of waste collected by the City of Manteca SWD is disposed of at the Forward Landfill,[48] but the City has also used the Altamont Landfill, American Avenue Disposal Site, Bakersfield Metropolitan, Fink Road Landfill, Foothill Sanitary Landfill, Hay Road Landfill, North County Landfill and Sacramento County Landfill in 2008.[49] Table 5.8-6 (Landfill Capacity) shows the existing capacities of each of these landfills, as well as their anticipated closure dates and annual usage.

TABLE 5.8-6

LANDFILL CAPACITY

Landfill	Location	Estimated permitted capacity (Cubic Yards)	Estimated Capacity Used (Cubic yards)	Remaining Estimated Capacity (Cubic yards)	Permitted maximum disposal (ton/day)	Closure date
Altamont Landfill	10840 Altamont Pass Road Livermore CA	62,000,000	16,280,000 (26.3%)	45,720,000 (73.7%)	11,500	1/1/2029
American Avenue Disposal Site	18950 W American Av Tranquility CA	32,700,000	3,341,465 (10.2%)	29,358,535 (89.8%)	2,200	8/31/2031
Bakersfield Metropolitan	2951 Neumarkel Road Caliente CA	53,000,000	8,181,042 (15.4%)	44,818,958 (84.6%)	4,500	12/31/2038
Fink Road Landfill	4000 Fink Road Crows Landing CA	14,500,000	4,500,000 (31%)	10,000,000 (69%)	2,400	12/1/2023
Foothill Sanitary Landfill	6484 North Waverly Road Linden CA	102,000,000	4,100,000 (4%)	97,900,000 (96%)	1,500	1/1/2054
Forward Landfill	9999 S. Austin Road Manteca CA	51,040,000	27,340,000 (53.6%)	23,700,000 (46.4%)	8,668	1/1/2020
Hay Road Landfill	6426 Hay Road Vacaville CA	28,240,000	6,425,422 (22.8%)	21,814,578 (77.2%)	2,400	1/1/2077
North County Landfill	17900 East Harney Lane Victor CA	20,900,000	5,600,000 (26.8%)	15,300,000 (73.2%)	825	1/1/2035
Sacramento County Landfill	12701 Kiefer Blvd Sloughhouse CA	7,400,000	4,500,000 (3.8%)	112,900,000 (96.2%)	N/A	1/1/2064

Source: CIWMB 2009.

44 City of Manteca. *Green Waste.* <www.ci.manteca.ca.us/pwt/swdiv/yardwaste.asp>, (November 4, 2009).

45 Data from 2006 represents the most recent data available for diversion.

46 CIWMB. *Overall Waste Stream Division.* <www.ciwmb.ca.gov/Profiles/Juris/JurProfile2.asp?RG=C&JURID=285&JUR=Manteca>. (November 4, 2009).

47 *Ibid.*

48 Lisa H., Solid Waste Division, City of Manteca, personal communication November 4, 2009.

49 CIWMB. *Overall Waste Stream Division.* <www.ciwmb.ca.gov/Profiles/Juris/JurProfile2.asp?RG=C&JURID=285&JUR=Manteca>. (November 4, 2009).

REGULATORY SETTING

Federal Regulations

Resource Conservation and Recovery Act

Volume 40 of the CFR, Part 258 (Resource Conservation and Recovery Act (RCRA, Subtitle D)) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills.

State Regulations

Assembly Bill 939

In 1989, the California Legislature passed AB 939 requiring California cities to implement plans designed to reduce waste deposited in landfills by 50 percent per person by December 31, 2000. As part of AB 939, cities and counties were required to develop a Source Reduction and Recycling Element (SRRE). The California Integrated Waste Management Board approved the City's SRRE in May 1995.

Public Resources Code Sections 40000 et seq.—California Integrated Waste Management Act

In 1989, the Legislature adopted the *Integrated Waste Management Act of 1989*, which established an integrated waste management hierarchy that consists of the following in order of importance: source reduction, recycling, composting, and land disposal of solid waste. The law also required that each county prepare a new Integrated Waste Management Plan. The Act further required each city to prepare a SRRE by July 1, 1991. Each source reduction element includes a plan for achieving a solid waste goal of 25 percent by January 1, 1995, and 50 percent by January 1, 2000. Recently, a number of changes to the municipal solid waste diversion requirements under the *Integrated Waste Management Act* were adopted, including a revision to the statutory requirement for 50 percent diversion of solid waste. Under these provisions, local governments shall continue to divert 50 percent of all solid waste on and after January 1, 2000.

Local Regulations

City of Manteca General Plan

The City of Manteca Public Facilities and Services Element is applicable to solid waste and the proposed project. Applicable goals and policies of this Element include the following:

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.**

Policies

PF-P-31. The City will implement and enforce the provisions of its Source Reduction and Recycling Element.

PF-P-32. The City shall support the continued use of the Lovelace Transfer Station on Lovelace Road, between Union Road and Airport Way, for the processing and shipping of solid waste materials.

City of Manteca Municipal Code

Article 8 (Health and Safety) Chapter 8.12 (Garbage Collection and Disposal) regulates solid wastes within the City of Manteca and would regulate the handling of solid wastes at the proposed project. Article 8 (Health and Safety) Chapter 8.14 (Recycling Program) regulates recycling within the City of Manteca. Section 8.14.020 enforces mandatory multifamily recycling and Section 8.14.030 regulates commercial business recycling. Section 8.14.050 guides construction and demolition recycling. These regulations would require the proposed project to recycle certain types of wastes produced by the construction and operation activities.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

To determine the amount of solid waste generated by the proposed project, solid waste generation factors identified by the CIWMB are applied to the square footage of the proposed project. To determine solid waste impacts associated with the proposed project, estimated future solid waste generation amounts are compared to the total anticipated remaining capacity at landfills that serve the City.

Standards of Significance

For the purposes of this EIR, impacts related to solid waste are considered significant if the proposed project would:

- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Fail to comply with applicable federal, State, and local statutes and regulations related to solid waste.

Project-Specific Impacts and Mitigation Measures

5.8-7 Implementation of the proposed project could generate solid waste that exceeds the permitted capacity of landfills.

As identified in Table 5.8-7 (Solid Waste Generated from Proposed Project), at buildout, the proposed project is estimated to produce approximately 88,320 pounds per day (lbs/day), or approximately 32,236,800 lbs/year, of solid waste. This translates to a generation rate of

approximately 44.16 tons of solid waste per day and 16,118.4 tons of solid waste per year for future development under the proposed project.

TABLE 5.8-7

SOLID WASTE GENERATED FROM PROPOSED PROJECT

Land Use	Solid Waste Generation Rates (lbs/unit/day)	Proposed Project	
		Units	Waste Generated (lbs/day)
High-Cube Warehouse	0.006 lb/sq ft/day	4,465,000 sf	26,790 lb/day
Light Industrial	0.006 lb/sq ft/day	1,523,000 sf	9,138 lb/day
Office Park	0.006 lb/sq ft/day	294,000 sf	1,764 lb/day
Mini-Storage	0.006 lb/sq ft/day	203,000 sf	1,218 lb/day
Shopping Center	0.025 lb/sq ft/day	1,588,000 sf	39,700 lb/day
Apartment	4 lb/dwelling unit/day	828 du	3,312 lb/day
Low/Medium Density Residential	10 lb/dwelling unit/day	2,358du	23,580 lb/day
High Density Residential	4 lb/dwelling unit/day	1,012 du	4,048 lb/day
		Total	**88,320 lb/day 32,236,800 lb/year or 44.16 tons/day 16,118.4 tons/day**

Note:
1. CIWMB. *Estimated Solid Waste Generation Rates.* <www.ciwmb.ca.gov/WASTECHAR/WasteGenRates/default.htm> (November 5, 2009).
Source: PBS&J 2009.

The Forward Landfill currently serves the City of Manteca and is expected to close in January 2020. The final phase of the proposed project is scheduled to commence in 2020 and the Forward Landfill would not be available for use. However, as indicated by Table 5.8-6 (Landfill Capacity) above, the City has used eight landfills - the Altamont Landfill, American Avenue Disposal Site, Bakersfield Metropolitan, Fink Road Landfill, Foothill Sanitary Landfill, Hay Road Landfill, North County Landfill and Sacramento County Landfill in 2008 - that could serve the proposed project site after the closure of Forward Landfill.

As shown in Table 5.8-7 (Solid Waste Generated from Proposed Project), after the closure of Forward Landfill on January 1, 2020, there are other landfills that could accommodate the proposed project. For example, Foot Sanitary Landfill has 96 percent remaining capacity and is scheduled to close on January 1, 2054; Sacramento County Landfill has 96.2 percent remaining capacity and is scheduled to close on January 1, 2064; Hay Road Landfill has 77.2 percent remaining capacity and is scheduled to close on January 1, 2077. These landfills are adequate to serve the proposed project site far past the buildout of the proposed project.

The additional 44.16 tons of solid waste per day anticipated to be generated by the proposed project would comprise only a small percent of the daily permitted landfill capacity at Altamont Landfill, American Avenue Disposal Site, Bakersfield Metropolitan, Fink Road Landfill, Foothill Sanitary Landfill, Hay Road Landfill, North County Landfill, or Sacramento County Landfill. These landfills are adequate to serve the proposed project and no new landfill would have to be constructed to accommodate the proposed project. The impact on landfill capacity is, therefore, ***less than significant***.

Mitigation Measure

None required.

5.8-8 Implementation of the proposed project could comply with all applicable federal, state, and local statutes and regulations related to solid waste.

To meet the requirements of the *California Integrated Waste Management Act, Manteca Municipal Code* Article 8 (Health and Safety) Chapter 8.14 (Recycling Program) establishes requirements for recycling. Section 8.14.050 (Construction and Demolition recycling) establishes requirements for recycling. Under Section 8.14.050, the project developer(s) would be required to submit to the City the amounts and type of recyclable material that have been received and processed from construction and/or demolition and also provide certified weigh-master tickets on request of the City. Targeted construction and demolition materials for recycling include concrete, asphalt, clean wood waste, brick and scrap metal.

The City enforces strict compliance with *Manteca Municipal Code* Article 8 (Health and Safety) Chapter 8.14 (Recycling Program); thus, the project would be required to adhere to these regulations. Additionally, the provisions of Article 8 (Health and Safety) Chapter 8.12 (Garbage Collection and Disposal) of the *Municipal Code*, which governs the procedures for collection, transfer, processing, and disposal of solid waste would be observed, including requirements for commercial wastes, and a description of prohibited substances. Compliance with these regulations would ensure that local, state, and federal regulations are observed. Therefore the proposed project would result in a ***less-than-significant impact*** related to solid waste regulations and no mitigation measures are required.

Mitigation Measure

None required.

Cumulative Impacts

The City of Manteca currently uses the Forward Landfill which is expected to close on January 1, 2020. As discussed above, there are eight landfills with substantial remaining capacity that could serve the City of Manteca after the closure of Forward Landfill. As noted above, several of these have closure dates that extend well beyond the timeframe of the General Plan; therefore, there is sufficient landfill capacity to accommodate growth associated with cumulative development. Therefore, the cumulative impact is *less than significant*.

All cumulative development would be required to comply with all applicable federal, State, and local statues and regulations related to solid waste. This includes compliance with AB 939, which requires a 50 percent diversion of all solid waste from disposal in local landfills. As of 2006,[50] the City of Manteca maintained a 38 percent diversion rate, which does not meet the AB 939 requirement of

50 Data from 2006 represents the most recent data available for diversion.

50 percent diversion of solid waste by the Year 2000.[51] Until such time that the City is able to meet the required diversion rates, any new development, even those that effectively reduce solid waste disposal rates, would contribute to the City's solid waste stream. Therefore, any development associated with cumulative projects within and around the City would be cumulatively significant. Although the project itself would have a less-than-significant contribution to this effect by complying with the federal, State, and local statues and regulations related to solid waste, the impacts associated with the proposed project would be *cumulatively considerable*.

51 CIWMB. *Overall Waste Stream Division.* <www.ciwmb.ca.gov/Profiles/Juris/JurProfile2.asp?RG=C&JURID=285&JUR=Manteca>. (November 4, 2009).

ENERGY

ENVIRONMENTAL SETTING

Pacific Gas and Electric (PG&E) is the primary electricity and natural gas supplier for the City of Manteca and provides electricity and natural gas to approximately 15 million people throughout a 70,000-square-mile service area in northern and central California.[52] PG&E's service area covers the area between Eureka and Bakersfield and from the Sierra Nevada to the Pacific Ocean. Electricity and natural gas are delivered through high voltage transmission lines and through gas pipelines. PG&E has indicated that the proposed project would require substation capacity work including a new substation bank at Ripon Substation along with substation protection equipment, substation bus structures, underground/overhead distribution re-conductoring and installation of a new conductor.[53] Improvements to facilities would be made in accordance with PG&E's electric rules and regulations on file with the State of California Public Utilities Commission (PUC) at the time service is requested. PG&E does not foresee any impacts on existing gas transmission facilities.[54]

PG&E is required to obtain 20 percent of its energy supply from renewable sources by 2017. Current sources of electricity include natural gas-fired, coal-fired, and hydroelectric plants. PG&E has 123,054 circuit miles of electric distribution lines and 18,610 circuit miles of interconnected transmission lines, with 5.1 million electric customer accounts. Approximately 51 percent of the electrical generating sources that delivers power to the PG&E grid use fossil fuels.

PG&E has 40,123 miles of natural gas distribution pipelines and 6,136 miles of transportation pipelines. PG&E has 4.2 million natural gas customer accounts. Natural gas is obtained from gas fields in northern California and other sources outside its service area.

PG&E has entered into a contract with El Dorado Energy, LLC, a subsidiary of Sempra Generation, to purchase 48 megawatts (MW) of photovoltaic solar power produced at the Copper Mountain Solar facility, which will produce an average of 100 gigawatt-hours of electricity each year, equal to the annual consumption of more than 14,000 average homes. Construction of the new solar project is slated to begin later this year and will be completed in 2011.[55]

REGULATORY SETTING

Federal Regulations

No federal policies related to energy would apply to the proposed project.

52 PG&E. <www.pge.com/about/company/profile>, (November 9, 2009).

53 Evan Stewart, Land Agent, PG&E, personal communication December 18, 2009.

54 *Ibid.*

55 PG&E. <www.pge.com/about/news/mediarelations/newsreleases/q4_2009/091015.shtml>, (November 9, 2009).

State Regulations

The California PUC sets forth specific rules that relate to the design, installation, and management of California's public utilities, including electric, natural gas, water and transportation, and telecommunications. PUC Decision #77187 and #78500 state that utilities must be underground if the developable lots are less than three acres in size. PUC Decision #81620 states that lots over three acres (large lot subdivision) are not required to underground utilities. A formal waiver from the PUC is required for an exemption from complying with these decisions.

PUC Decision 95-08-038 governs the planning and construction of new transmission facilities, distribution facilities, and substations. The Decision requires permits for the construction of certain power line facilities or substations if the voltages would exceed 50 kilovolts or the substation would require the acquisition of land or an increase in voltage rating above 50 kilovolts. Distribution lines and substations with voltages less than 50 kilovolts do not need to comply with this Decision; however, the utility must obtain any applicable local permits required for the construction and operation of these projects.

California Code of Regulations (CCR) Title 24

New buildings in California are required to conform to energy conservation standards specified in Title 24 of the CCR. The standards establish "energy budgets" for different types of residential and non-residential buildings, with which all new buildings must comply. The energy budget has a space-conditioning component and a water-heating component, both expressed in terms of energy (British thermal units, BTU) consumed per year. The regulations allow for trade-offs within and between the components to meet the overall budget. Energy consumption of new buildings in California is regulated by the State Building Energy Efficiency Standards, embodied in Title 24 of the CCR. The efficiency standards apply to new construction of both residential and nonresidential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building or individual agency permit and approval processes. The City requires all new buildings to meet Title 24 standards.

Local Regulations

City of Manteca General Plan

The City of Manteca Public Facilities and Services Element and the Resource Conservation Element are applicable to energy and the proposed project. Applicable goals and policies of these Elements include the following:

Goal PF-10. The City shall ensure adequate, reliable electric service is available to all users in the City.

Policies

PF-P-29 Ensure that reliable, adequate electric service is available to all users in the City.

PF-P-30 Cooperate with and encourage efforts to expand the opportunities for electric power service in the City.

Implementation Measures

PF-I-14 The City will consider participating in generating and/or distributing electric service within the City.

PF-I-15 The City will support energy conservation measures and innovative uses of solar energy, heat recovery, and co-generation in all structural and industrial processes.

PF-I-16 The City will confer with utility companies regarding major development plans and cooperate with planning extension of utilities.

PF-I-17 The City will require undergrounding of utility lines in new development, and as areas are redeveloped, except where infeasible for operational reasons.

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.

Goal RC-4. Encourage private development to explore and apply non-traditional energy sources such as co-generation, wind, and solar to reduce dependence on traditional energy sources.

Goal RC-5. Promote energy efficiency in new development and in building design.

Policies

RC-P-6 Comply with construction and design standards that promote energy conservation.

RC-P-7 Conserve public utilities.

RC-P-8 Conserve petroleum products.

RC-P-9 The City shall support use of alternative energy sources in new commercial, industrial and residential development.

Implementation Measures

RC-I-6 The City shall implement development standards that promote energy conservation and the use of solar energy techniques for heating and cooling, including building orientation, street and lot layout, landscape placement, and protection of solar access.

RC-I-7 Implement construction standards which promote energy conservation including window placement, building eaves, and roof overhangs.

RC-I-8 The City shall enforce Title 24 energy requirements (Building Code, California Code of Regulations (CCR)) which define construction standards that promote energy conservation.

RC-I-9 Develop a public education program to increase public participation in energy conservation.

RC-I-10 Encourage large energy users to use an energy conservation plan as part of the project review and approval process, and develop a program to monitor compliance with and effectiveness of that plan.

RC-I-11 Cooperate with other agencies and jurisdictions to expand energy conservation programs.

RC-I-12 Investigate alternative energy sources including co-generation, active solar energy, and wind generation.

RC-I-13 Implement Transportation System Management (TSM) measures, as outlined in the Circulation Element, which reduce the need for automobile use and petroleum products through an efficient roadway and intersection system. The circulation pattern is designed to minimize trips required for shopping and daily errands.

RC-I-14 Develop alternative transportation systems, such as public transportation and bikeways, which reduce the need for automobile use and petroleum products.

RC-I-15 Comply with state requirements for regulation of new fireplaces and wood stoves.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

To determine if the proposed project would result in impacts on electricity and natural gas supplies, the projected increase in energy demand for each utility was analyzed and calculated using a per-square-foot consumption rate. As shown in Table 5.8-8 (Projected Electricity Demand), the anticipated electricity demand associated with the proposed project is 94,775,297 kilowatt-hours per year (kWh/year).

TABLE 5.8-8

PROJECTED ELECTRICITY DEMAND

Land Use	Electricity Demand Rates	Proposed Project	
		Units	Demand Rates
High-Cube Warehouse	4.35 kWh/sf/year	4,465,000 sf	19,422,750 kWh/year
Light Industrial	15.3 kWh/sf/year	1,523,000 sf	23,301,900 kWh/year
Office Park	12.95 kWh/sf/year	294,000 sf	3,807,300 kWh/year
Mini-Storage	15.3 kWh/sf/year [1]	203,000 sf	3,105,900 kWh/year
Shopping Center	13.55 kWh/sf/year	1,588,000 sf	21,517,400 kWh/year
Apartment	5,626.50 kWh/unit/year	828 du	4,658,742 kWh/year
Low/Medium Density Residential	5,626.50 kWh/unit/year	2,358du	13,267,287 kWh/year
High Density Residential	5,626.50 kWh/unit/year	1,012 du	5,694,018 kWh/year
		Total	**94,775,297 kWh/year**

Notes: KWh = kilowatt-hour; sf = square feet
[1] Based on industrial general generation rates
Source: SCAQMD.1993. *CEQA Air Quality Handbook*. November. p. A9-114.

As shown in Table 5.8-9 (Projected Natural Gas Demand), the anticipated natural gas demand associated with the proposed project is 441,975,500 cubic feet per year (cf/year) or 4,419,765 therms per year (therms/year).

To determine impacts on energy supplies resulting from implementation of the proposed project, the projected increase in electricity demand was presented to the utility providers to evaluate whether there would be an adequate and reliable source of electricity and natural gas for the proposed project, and whether any infrastructure improvements would be necessary.

TABLE 5.8-9

PROJECTED NATURAL GAS DEMAND

Land Use	Natural Gas Demand Rates	Proposed Project	
		Units	Demand Rates
High-Cube Warehouse	18.4 cf/sf/year	4,465,000 sf	82,156,000 cf/year
Light Industrial	23.7 cf/sf/year	1,523,000 sf	36,095,100 cf/year
Office Park	23.7 cf/sf/year	294,000 sf	6,967,800 cf/year
Mini-Storage	26 cf/sf/year	203,000 sf	5,278,000 cf/year
Shopping Center	15.7 cf/sf/year	1,588,000 sf	24,931,600 cf/year
Apartment	51,000 cf/unit/year	828 du	42,228,000 cf/year
Low/Medium Density Residential	74,000 cf/unit/year	2,358du	174,492,000 cf/year
High Density Residential	69,000 cf/unit/year	1,012 du	69,828,000 cf/year
		Total	**441,976,500 cf/year OR 4,419,765 therms/year**

Notes: cf = cubic feet; sf = square feet
Source: Energy Information Administration, Office of Energy Markets and End Use, Residential Energy Consumption Survey 2005 Data Table US8 and Forms EIA-871A, C, and E of the 2003 Commercial Buildings Energy Consumption Survey.

Standards of Significance

For the purposes of this EIR, impacts related to energy are considered significant if the proposed project would:

- Require or result in the construction of new energy production and/or transmission facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Encourage the wasteful or inefficient use of energy.

Project-Specific Impacts and Mitigation Measures

5.8-9 Development proposed under the proposed project would increase the demand for energy, but would not result in the construction of new energy production or transmission facilities.

Electricity

Implementation of the proposed project would increase the use of electricity in order to light, heat, and air condition the future development. PG&E would provide electric and natural gas service to the project. The on-site service lines would be sized to meet the demand of the project, and public utility easements would be dedicated for all underground facilities. Extension of lines and construction of facilities would occur concurrently with development phases, and the location of this infrastructure would be identified in the final project design. All new on-site infrastructures would be installed underground in conformance with City standards.

Based on the information provided in Table 5.8-8 (Projected Electricity Demand) above, the total annual electricity consumption at buildout of the proposed project is estimated to be 94,775,297 kWh/year. The State is currently experiencing constraints related to energy supply and

delivery. These constraints are generally limited to peak demand days during the summer months, such that for the majority of the days during the year adequate energy supplies are reliably provided to consumers. On peak days, the incremental demand from the proposed project would contribute to electricity supply and delivery constraints. The proposed project would be required to comply with the energy conservation measures contained in Title 24, which would reduce the amount of energy needed for the operation of any buildings constructed as a part of the proposed project.

In addition to on-site electric transmission facilities, PG&E has indicated that the proposed project would require substation capacity work including a new substation bank at Ripon Substation along with substation protection equipment, substation bus structures, underground/overhead distribution re-conductoring and installation of a new conductor.[56] These improvements would occur to existing facilities and would not require substantial expansions of facilities such that significant physical effects would result. Improvements to facilities would be made in accordance with PG&E's electric rules and regulations on file with the State of California PUC at the time service is requested. Further, the proposed project would comply with the provisions of Title 24 of the CCR. As such, future development under the proposed project would be designed to conserve energy. Therefore, this impact would be ***less than significant***, and no mitigation is required.

Natural Gas

As shown above in Table 5.8-9, the demand for natural gas under the future development of the proposed project would be approximately 441,975,500 cf/year or 4,419,765 therms/year. Implementation of the proposed project would be served by existing gas lines located in various locations within the vicinity of the project site. Any expansion of service necessitated by implementation of the proposed project would be in accordance with PG&E's policies and extension rules on file with the California PUC at the time contractual agreements are made.

For the reasons discussed above, the proposed project would not require or result in the construction of new energy production or transmission facilities, the construction of which could cause a significant environmental impact. In addition, PG&E does not foresee any impacts on existing gas transmission facilities.[57] Therefore, this impact is considered ***less than significant***, and no mitigation is required.

Mitigation Measure

None required.

5.8-10 Implementation of the proposed project would not result in the wasteful or inefficient use of energy by the proposed project.

As discussed under the Regulatory Framework section above, all new buildings are required to conform to the energy conservation standards specified in CCR Title 24. Because the energy

56 Evan Stewart, Land Agent, PG&E, personal communication December 18, 2009.

57 *Ibid.*

standards codified in Title 24 are designed to "reduce the wasteful, inefficient and unnecessary consumption of energy," compliance by the proposed project with Title 24 requirements would ensure that the proposed project would not result in the wasteful or unnecessary use of energy. This would be ***less-than-significant impact***. No mitigation is required.

Mitigation Measure

None required.

Cumulative Impacts

Cumulative development in PG&E's service area would increase the use of electricity in order to light, heat, and air condition the future development. As new projects are developed, energy conservation measures are employed. For example, all new projects constructed in California are required to conform to the energy conservation standards specified in Title 24 of the CCR, and many individual projects include additional energy conservation measures. With regard to natural gas, cumulative development would also result in permanent and continued use of this resource.

Development in undeveloped areas of PG&E's service area could require the extension of existing lines, new transmission facilities, and substations. Natural gas regulators and transmission lines would be required to serve residences and businesses. Expansions of these types of facilities would be required to serve the growing population of PG&E's service area, and would be required to be constructed by the service provider as demand from new development warrants. Because it is not known where new development would occur, the extent to which new facilities would be required to serve cumulative development or where any such facilities would be developed cannot be determined. However, the potential impacts of constructing any new facilities would be addressed concurrent with the proposed development. The construction and operation of additional natural gas or electrical facilities in areas where such facilities currently do not exist could result in potentially significant environmental effects, in part, related to construction activities. However, it would be speculative to identify the level of significance of potential environmental impacts absent a plan that identifies a specific project and/or project location. Further, any infrastructure improvements would be subject to environmental review on a project-by-project basis as part of a proposed development or subsequently by the service provider. Although service providers would construct facilities as demand occurs, and would be subject to environmental review as part of the proposed development project or analyzed independently by the service provider, this cumulative impact is considered *potentially significant*.

PG&E has determined that it would be able to serve the proposed project with some improvements to local transmission infrastructure. Therefore, the contribution of the proposed project is not considerable. This is considered to be a ***less-than-significant impact***.

5.9 TRANSPORTATION AND CIRCULATION

5.9 TRANSPORTATION AND CIRCULATION

INTRODUCTION

This chapter presents the results of the transportation impact analysis prepared by Fehr & Peers for the proposed Austin Road Business Park and Residential Community (ARBPRC). The purpose of this analysis is to identify potential transportation impacts caused by the proposed project and to determine required measures to mitigate project-related significant impacts. Figure 5.9-1 shows the location of the project and study intersections.

Existing and future conditions were evaluated with level of service (LOS) calculations for the key intersections and freeway mainline segments near the project site. Project impacts were determined according to guidelines established by the City of Manteca, the City of Ripon, San Joaquin County, and the California Department of Transportation (Caltrans).

The operations of study intersections were evaluated during weekday morning (AM) and evening (PM) peak hours. The operations of the freeway mainline segments were evaluated using average daily traffic (ADT) volumes. Each intersection and freeway segment was evaluated under the following four scenarios:

- **Scenario 1 – Existing Conditions**: Existing volumes obtained from traffic counts collected in January and February of 2008.
- **Scenario 2 – Existing Plus Project Conditions**: Existing volumes plus traffic generated by the proposed ARBPRC.
- **Scenario 3 – Cumulative No Project Conditions**: Volumes obtained from the City of Manteca version of the San Joaquin Council of Governments (SJCOG) regional travel demand forecasting (TDF) model under cumulative (year 2025) conditions.
- **Scenario 4 – Cumulative Plus Project Conditions**: Volumes obtained from the City of Manteca cumulative year (2025) version of the SJCOG TDF model which included the proposed ARBPRC project.

EXECUTIVE SUMMARY

The ARBPRC project proposes to construct a significant amount of new land uses in Southern Manteca, near the existing Austin Road/SR 99 interchange. These new land uses would significantly change regional travel patterns as new residential, commercial, and industrial developments would alter where people live, work and shop in the northern San Joaquin Valley.

Full buildout of the project under existing conditions would result in significant impacts at 10 of the 26 study intersections. In most cases, feasible mitigations in the form of additional lanes, installation of traffic signals, or fair-share payments were recommended for intersection impacts. However, impacts at the intersections near the Austin Road/SR 99 interchange were more challenging to mitigate. The following provides some background on this interchange:

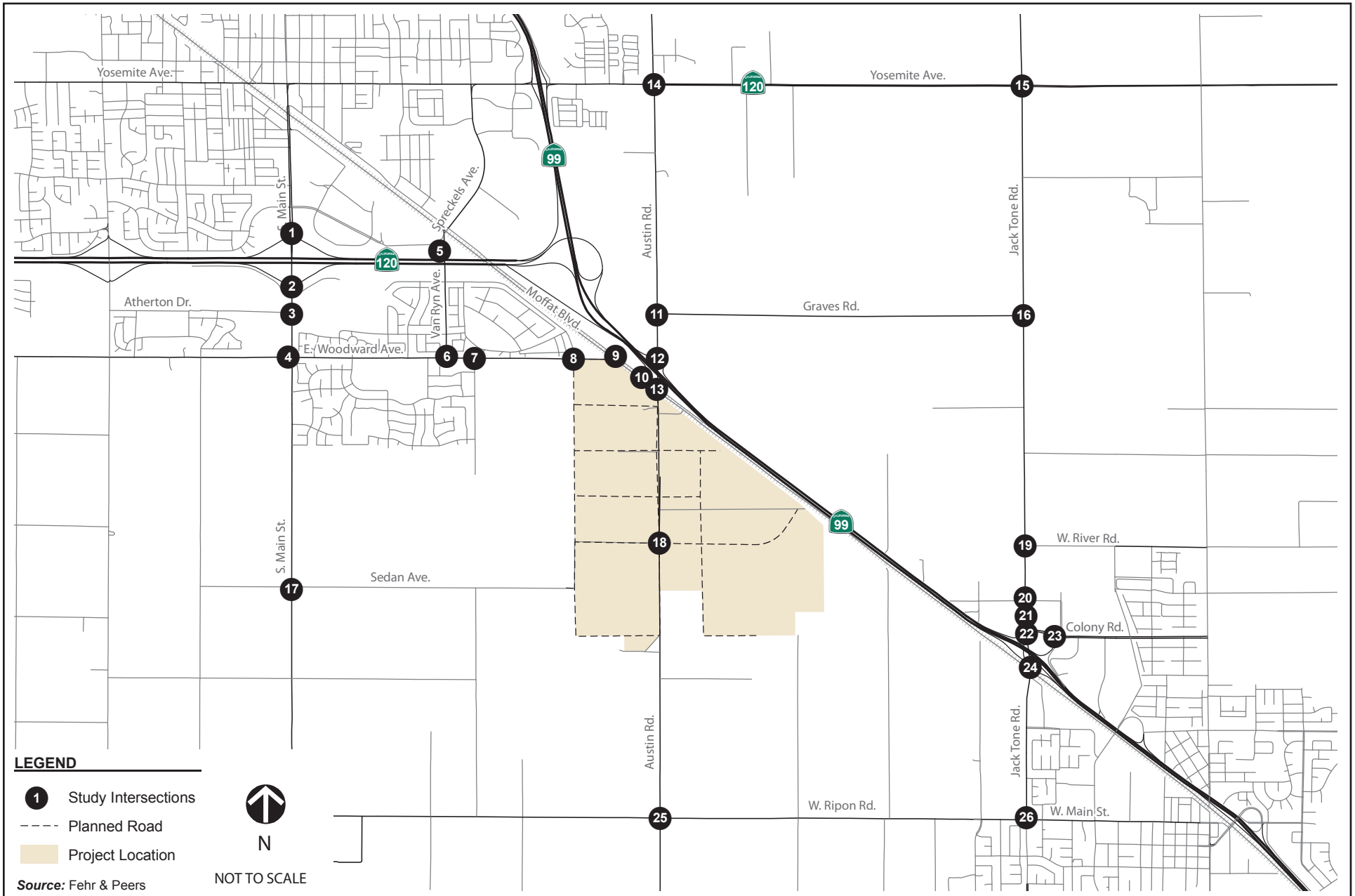

FIGURE 5.9-1

Project Location and Study Intersections

- The existing Austin Road/SR 99 interchange currently operates acceptably. However, it was constructed with features (e.g., vertical curvature) that no longer meet current design standards. In addition, it does not meet Caltrans' minimum interchange spacing requirements given its proximity to the SR 99/SR 120 interchange. Thus, Caltrans does not support major capacity improvements at this interchange in its existing location.
- Plans call for the existing Austin Road/SR 99 interchange to be replaced by a new interchange located to the south of the current interchange. Preliminary analysis of this new interchange indicates that it should provide access to properties to its west (i.e., the ARBPRC project) and its east (i.e., undeveloped land in City of Ripon). Due to the close proximity of SR 99 to the Union Pacific Railroad tracks, realignment of a portion of SR 99 is required to construct the new interchange. As a result, this is an expensive improvement, estimated to cost between $110 and $160 million.
- Analyses presented in this section show that the existing interchange would operate unacceptably under cumulative conditions without any development of the ARBPRC project. Therefore, regardless of whether the ARBPRC project moves forward, the existing Austin Road/SR 99 interchange will ultimately need to be reconstructed in its new location. When the new interchange is constructed, the existing interchange would be converted to an overcrossing (i.e., no access to/from SR 99).

The ARBPRC project cannot reasonably be expected to fully fund or construct the replacement for the Austin Road/SR 99 interchange. Such a conclusion would not satisfy the CEQA requirement of "rough proportionality" between project impacts and mitigation measures. However, the ARBPRC can play an important role (given its size and number of dwelling unit equivalents) in its funding as described below.

This section recommends that the Cities of Manteca and Ripon coordinate with Caltrans and SJCOG to develop and participate in a sub-regional fee program to collect impact fees from new development in each city to help fund construction of this new interchange. The ARBPRC project would be subject to payment of this fee as mitigation for project-specific and cumulative impacts. Since it will take many years to collect the necessary fees, project impacts to the existing Austin Road/SR 99 interchange are considered significant and unavoidable.

The existing Austin Road/SR 99 interchange would need to have substantially more capacity than it current has in order to accommodate traffic associated with buildout of the ARBPRC project. In recognition of this constraint and the reality that Caltrans will not allow full interchange reconstruction at the existing location, and the likelihood that a replacement for the Austin Road/SR 99 interchange is many years away, this section has developed short-term strategy that would allow project development only to the level that can be supported by the transportation system with some minor capacity enhancements. The strategy is described below:

- The ARBPRC applicant would construct several minor improvements (see Figure 5.9-9 for illustration of improvements) that would increase the capacity of the existing interchange. An iterative traffic operations analysis determined that up to 10.5 percent of project trips could be generated while maintaining acceptable operations at the capacity-enhanced existing interchange.

Allowing the ARBPRC project to develop up to a certain point is important to begin raising funds for the ultimate relocation of the Austin Road interchange. There are currently no other funding sources or mechanisms that could begin raising revenues in the near-term. Once the relocated interchange is in place, the ARBPRC project could continue to develop beyond the level that could be accommodated on the street system without the new interchange. As described in this section, 10.5 percent of the project's total trips represents a considerable amount of allowable development.

While this strategy is considered to be an effective and reasonable approach to providing needed accessibility improvements to the ARBPRC project, project impacts at the existing interchange are nonetheless considered significant and unavoidable due to the uncertainty that Caltrans will allow these improvements.

The ARBPRC project would cause significant impacts on various freeway mainline segments and ramp junctions on SR 120 and SR 99 near the project area. To mitigate freeway impacts, the project would be required to pay the SJCOG Regional Transportation Impact Fee. In addition, the project would generate transportation funding through the Measure K sales tax. These funds would contribute to a freeway widening project on SR 99 north of SR 120, which would reduce the project's impact to a less than significant level on four freeway mainline segments (this project is currently under design and is expected to begin construction in 2012). However, there are no near-term projects on the SR 120 mainline or SR 99 south of SR 120 that would be completed in a reasonable time frame to reduce project impacts. Therefore, impacts on these facilities would remain significant and unavoidable.

Under cumulative conditions, the project would impact 13 study intersections. These impacts can generally be mitigated through the City updating the Public Facilities Implementation Plan (PFIP) to include the ultimate intersection improvements recommended in this report. The project would pay the PFIP fee to pay its fair-share for the recommended improvements. Impacts at the Main Street/SR 120 interchange can be mitigated through the project paying a fair-share fee for interchange improvements at this location. This fair-share payment could either be through a PFIP interchange fee or a separate impact fee payment. While this fee will help implement the new interchange, impacts at the Main Street/SR 120 ramp terminal intersections are considered significant and unavoidable since the improvements cannot be guaranteed.

The ARBPRC project also impacts freeway mainline and ramp junction areas under cumulative conditions, despite several widening projects on I-5, SR 120, and SR 99 that are expected to be completed under cumulative conditions. While additional freeway lanes would reduce the significance of the project's impact, Caltrans has no plans for additional widening of these freeways beyond what is shown in the San Joaquin Council of Governments 2007 Regional Transportation Plan (RTP). While there are no improvements planned and the project impact on these facilities is considered significant and unavoidable, the project must pay the SJCOG Regional Transportation Impact fee to support future freeway projects. It is also recommended that the City continue to support the Measure K sales tax program.

ENVIRONMENTAL SETTING

This section describes the existing transportation system near the proposed project site, including regional roadways, key local roadways, public transit, and the pedestrian/bicycle system.

Existing Roadway Network

As shown in Figure 5.9-1, State Route (SR) 120 and SR 99 provide regional access to the proposed project. The Austin Road interchange with SR 99 provides the primary access point to the regional freeway network; however, access is also available via the Main Street interchange with SR 120. Woodward Avenue, Austin Road, Moffat Boulevard, Main Street, and Atherton Drive serve as the primary roadways providing local access within the study area. A description of these key regional and local roadways is provided below.

Regional Access

SR 120 is an east-west, four-lane freeway that primarily serves as a connection between I-5 and SR 99. Based on traffic counts collected by Fehr & Peers in 2008, SR 120 has an existing ADT volume of approximately 74,500 vehicles just west of the Main Street interchange. The primary access to SR 120 near the ARBPRC is the interchange at Main Street. This interchange is a spread-diamond configuration with a two lane overcrossing. The ramp terminal intersections feature traffic signals and turn lanes.

SR 99 is a major north-south freeway located immediately east of the project site. SR 99 provides a connection between all of the major cities in the Central Valley, from Sacramento and Stockton in the north to the cities of Modesto, Merced, Fresno, and Bakersfield in the south. SR 99 has three lanes in each direction south of SR 120 and two lanes in each direction north of SR 120. SR 99 has an ADT of approximately 129,000 between Austin Road and the SR 120 interchange.

The primary access to SR 99 near the project site is the interchange at Austin Road. This is interchange features an older design that is no longer a Caltrans standard. The northbound ramps are in a diamond configuration, and there is a southbound "hook" off-ramp that intersects with Moffat Boulevard. The southbound onramp is an extension of Moffat Boulevard. The Austin Road interchange also has several other non-standard design features, including a steep vertical curve over the SR 99 mainline that limits sight distance, and is located one-half mile south of the SR 120 interchange. This close spacing is much closer than the Caltrans standard of one mile between typical interchanges and two miles between freeway-to-freeway interchanges.

Local Access

Woodward Avenue is the primary east-west roadway south of SR 120 in Manteca. It borders the northernmost portion of the project site, and extends from Moffat Boulevard to the east to Williamson Road to the west. Adjacent to the project site, Woodward Avenue is a two-lane roadway with no pedestrian or bicycle facilities and a posted speed limit of 45 mph. Woodward Avenue crosses the Union Pacific Railroad tracks immediately west of Moffat Boulevard. West of Atherton Drive,

Woodward Avenue is built to urban standards on the north side of the street with two westbound travel lanes, curb, gutter, and sidewalk, while the south side remains rural in character. Between Bridewell Lane and Main Street, Woodward Avenue becomes a four-lane roadway that is built to urban standards with sidewalks on both sides of the street. Some of Woodward Avenue's multilane segments are divided by a raised median, while other segments have a two-way left-turn lane. West of Main Street, Woodward Avenue is a two-lane road with a rural character.

Austin Road is a north-south roadway that extends approximately 15 miles from Mariposa Road, located to the southeast of Stockton, south to Casswell State Park on the Stanislaus River. The vast majority of the roadway, including the portion through the project site, is rural in character with no bicycle or pedestrian facilities. Austin Road has an interchange with SR 99 located just north of the project site and crosses the Union Pacific Railroad immediately south of the SR 99 interchange. For the segment nearest the SR 99 interchange, the roadway has a posted speed limit of 30 mph, which increases to 55 mph as Austin Road travels south through the proposed project site.

Moffat Boulevard is a northwest-southeast, two-lane roadway that runs from Main Street in Downtown Manteca southward to SR 99 at the Austin Road interchange. Moffat Boulevard terminates at the southbound on-ramp from Austin Road and also intersects the southbound hook off-ramp from SR 99. The roadway has a posted speed limit of 45 mph.

Main Street is a north-south, two-lane roadway located approximately 1.5 miles west of the project site. Main Street provides access to SR 120 and Downtown Manteca to the north. South of SR 120, Main Street has a posted speed limit of 40 mph, and immediately north of Woodward Avenue, the east side of Main Street is built to urban standards, with curb, gutter, and sidewalk. South of the City of Manteca, Main Street changes name to South Manteca Road.

Atherton Drive is a discontinuous east-west roadway south of SR 120 that is planned to eventually connect McKinley Avenue on the west side of the city to Woodward Avenue near its intersection with Moffat Boulevard. The segment of Atherton Drive nearest to the project, between Woodward Avenue and Van Ryn Avenue, is constructed as a four-lane roadway with a sidewalk on the south side of the street.

Existing Transit Services

No existing transit facilities serve the project area. However, several transit agencies provide service to the City of Manteca. These agencies include Manteca Transit, which provides three fixed-route services and a Dial-A-Ride component; the San Joaquin Regional Transit District (SJRTD) with fixed-route and flexible-response bus service in San Joaquin County; the Altamont Commuter Express (ACE), which operates a commuter rail service; and the Modesto Area Express (MAX), which operates fixed-route bus service between Modesto and the Lathrop-Manteca ACE Rail Station. Figure 5.9-2 shows that all transit service is located well north of the project area.

Pedestrian and Bicycle System

Pedestrian facilities include sidewalks, crosswalks, and pedestrian signals. As described in the Existing Roadway System section, there are scattered pedestrian facilities along some of the major roads through the built-out portions near the project site. However, immediately adjacent to the project site, there are no pedestrian or bicycle facilities. Figure 5.9-3 shows the existing bicycle facilities in the area.

Railroad Crossings

Manteca has long been a center of freight rail distribution. Because of this history, there are numerous at-grade railroad/roadway crossings in the City. Near the project site, there are at-grade crossings of the Union Pacific Railroad at Austin Road and Woodward Avenue. Both crossings feature advanced warning signs, railroad crossing pavement markings, stop lines, crossing gates, flashing lights, and warning bells. According to the US Department of Transportation, as of November 2009, there are approximately 20 trains per day that cross Austin Road and Woodward Avenue.

A review of collision data over the last 20 years indicates that there have been a total of three rail/vehicle collisions at the Austin Road crossing and no collisions at the Woodward Avenue crossing.[1] An examination of the Austin Road data found that one collision was caused by a car that stalled on the crossing, one collision was caused by a driver intentionally driving around the crossing arms, and the cause of the other collision was not specified. There were no injuries and only minimal property damage (<$6,500) in each case. The most recent rail/vehicle collision occurred in 2001.

Table 8-2 of the Railroad Safety Statistics 2007 Final Annual Report (Federal Railroad Administration, April 2009) reported motor vehicle collision rates throughout the United States at public at-grade rail crossings. The data show that the rate of collisions per 100,000-vehicle crossings (i.e., 100k VC) are lower when the crossing has gates, flashing lights, or warning bells versus stop signs or cross bucks (i.e., railroad crossing signs). The reported collision rate for crossings with gates or flashing lights was approximately 0.5 accidents per 100k VC, whereas the rate was about 1.4 accidents per 100k VC for crossings with cross bucks and 4.3 collisions per 100k VC for crossings with stop signs.

This data provides substantial evidence that the warning devices presently in place at the Austin Road and Woodward Avenue at-grade railroad crossings are associated with lower levels of collision rates when considering the entire range of potential warning devices. This conclusion is confirmed by the observed collision records at each location since 1989.

1 Federal Railroad Administration Office of Safety Analysis, <http://safetydata.fra.dot.gov/OfficeofSafety/>.

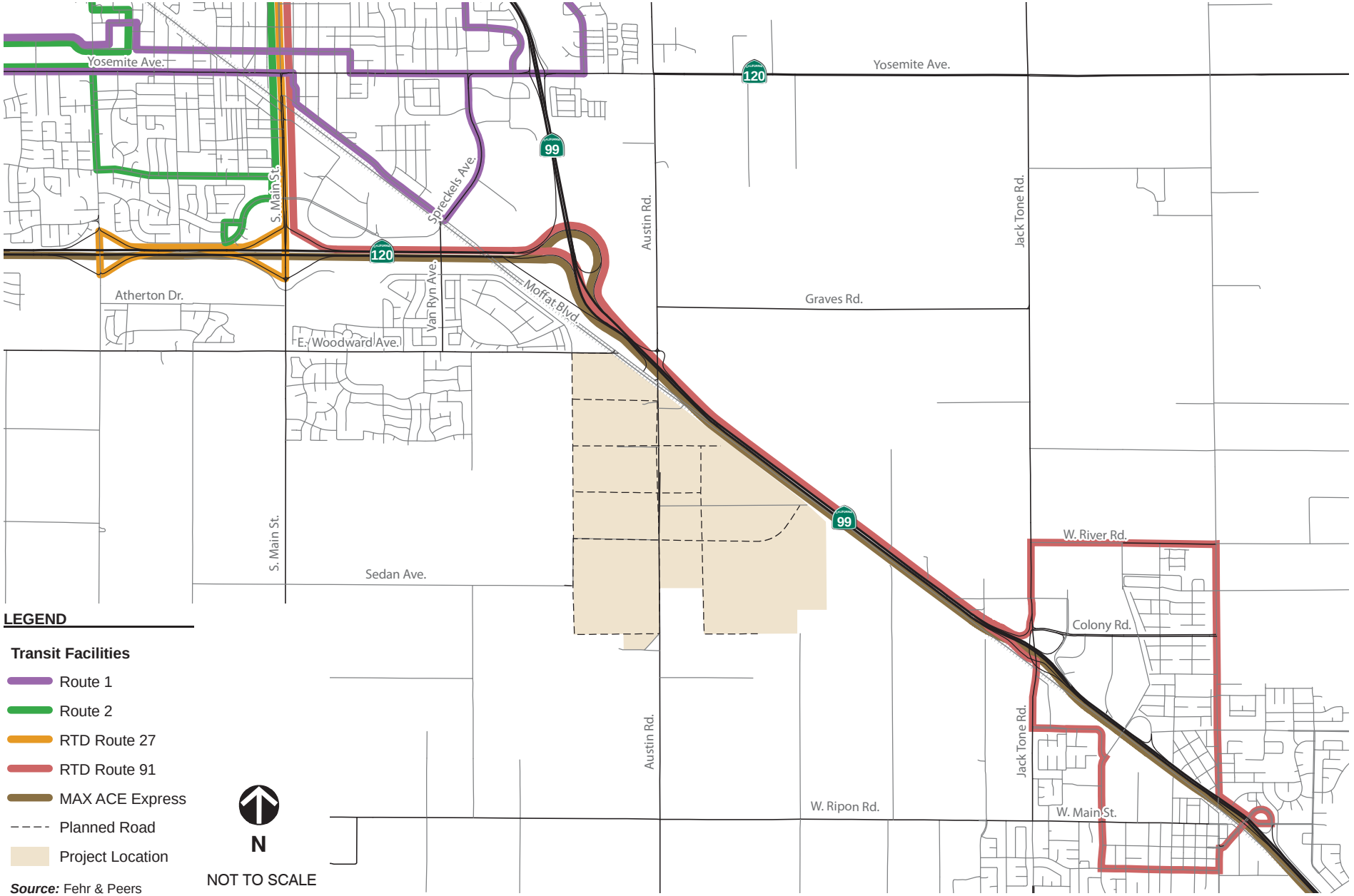

FIGURE 5.9-2

Existing Transit Facilities

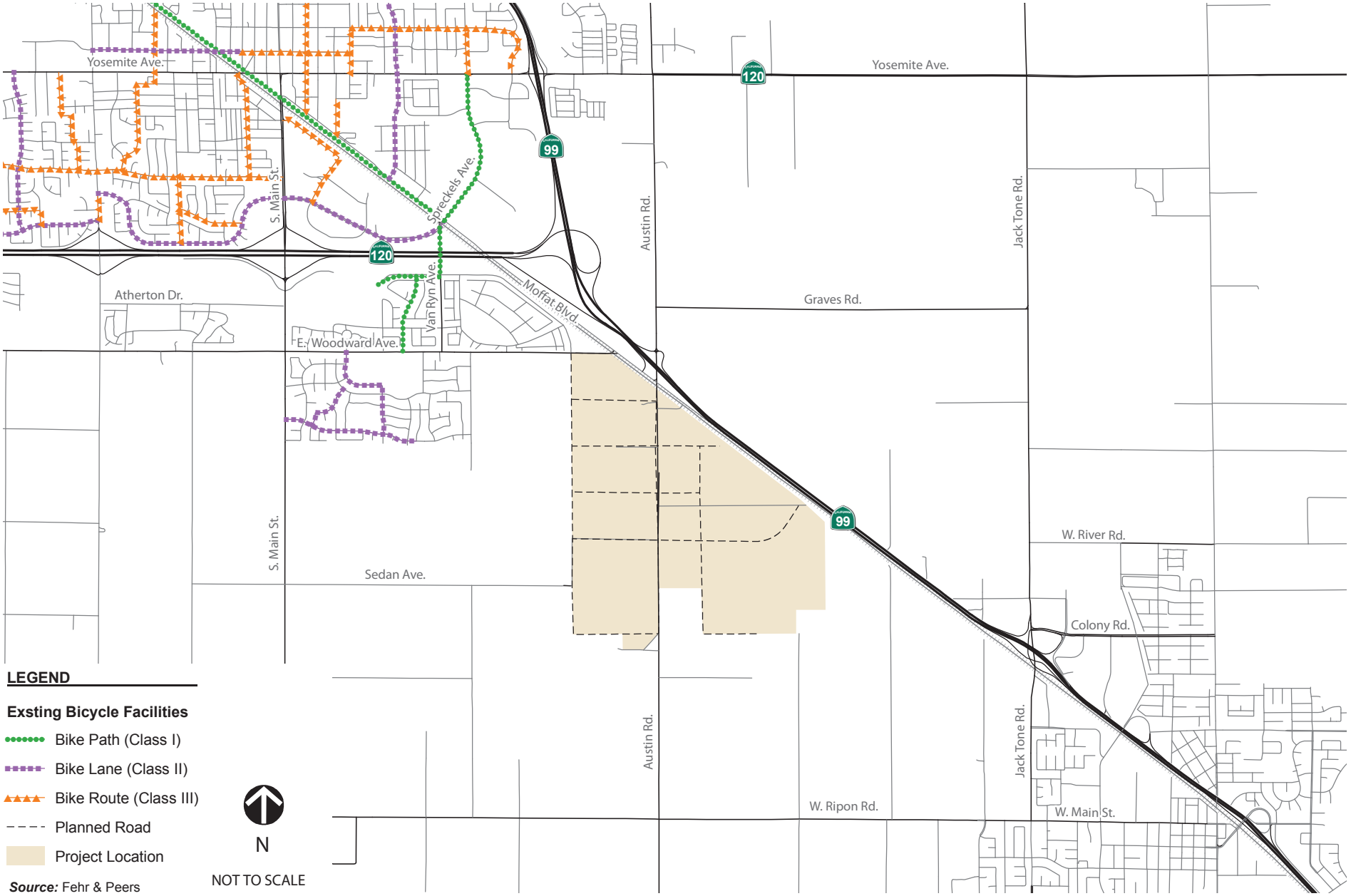

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FIGURE 5.9-3

Existing Bicycle Facilities

REGULATORY SETTING

This section describes the regulatory setting and the terminology used throughout the report to describe the conditions of the transportation system with and without the proposed project.

Federal and State Regulations

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.

Local Regulations

San Joaquin County Regional Transportation Plan

San Joaquin County, through SJCOG, periodically updates the RTP, which outlines countywide transportation expenditures based on funding from sources like 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 near the project site, which include widening SR 99 to six lanes between SR 120 in Manteca and SR 4 in Stockton, widening SR 120 to six lanes between Interstate 5 (I-5) and SR 99, adding additional lanes to I-5, and widening Yosemite Avenue (SR 120) to four lanes east of Austin Road.

San Joaquin County Congestion Management Program

The San Joaquin County Congestion Management Program requires SJCOG to create, manage, and update a countywide Congestion Management Plan (CMP). The purpose of the CMP is to establish LOS standards for a defined set of freeways, highways, and local roads, as well as to maintain or achieve those standards by increasing capacity on these roadways and/or managing travel demand.

The CMP determines the LOS standard for the following facilities included in this study:

- SR 120 between Yosemite Avenue and SR 99 – LOS F
- SR 99 – LOS D

Although the CMP standard for SR 120 is LOS F, Caltrans does not support this designation and instead uses a standard of LOS D.

San Joaquin County Regional Traffic Impact Fee

SJCOG has implemented a regional traffic impact fee that is assessed on developments throughout San Joaquin County. As of 2009, 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, as well as widening SR 120 to six lanes between I-5 and SR 99.

City of Ripon General Plan

The LOS threshold from the City of Ripon General Plan is relevant to this analysis since some study facilities are within Ripon. The Ripon General Plan circulation element specifies LOS D as the minimum acceptable LOS for transportation facilities within the City.

San Joaquin County General Plan

The LOS threshold from the San Joaquin County General Plan is relevant to this analysis since some study facilities are within unincorporated portions of the County. The San Joaquin General Plan circulation element specifies LOS D as the minimum acceptable LOS for county-owned transportation facilities.

City of Manteca General Plan

The City of Manteca General Plan (2003) includes the following policies related to transportation and circulation that are relevant to this analysis:

Street System

Policies

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.

C-P-2 Manteca's target for transportation LOS is to provide a Citywide average of LOS of C or better, and a minimum of LOS D at any individual location. 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. This applies to facilities, for example, on which it would cost significantly more per dwelling unit equivalent (DUE) to provide LOS C than to provide LOS D.

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.

Note that for the purposes of this environmental analysis, the City considers LOS D as the acceptable LOS threshold for all intersections in the City of Manteca. This LOS standard was chosen primarily because of the constrained operations on the state highway system and the LOS policies of the surrounding jurisdictions.

Policies

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.

C-P-5 Development that 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.

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 (PFIP).

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.

The City also requires new development to participate in the funding and construction of collector and arterial street improvements identified in the City's Street Master Plan.

Parking

Policies

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.

C-P-29 Ensure that there is adequate parking for normal commercial activities.

C-P-30 Ensure that there is adequate parking for special events.

C-P-31 Coordinate the parking area locations with the roadway, transit, pedestrian, and bikeway systems.

Bikeways and Pedestrian Paths

Policies

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.

C-P-35 Route sidewalks so that they connect to major public parking areas, transit stops, and intersections within the bikeway system.

C-P-36 Provide adequate bicycle parking facilities at commercial, business/professional, and light industrial uses.

CD-P-31 The pedestrian and bikeway system shall be linked to other pedestrian and bikeways in adjacent neighborhoods and ultimately, to the City-wide Pedestrian and Bikeway trail System to provide a continuous interconnected system.

City of Manteca Bicycle Master Plan

The City of Manteca Bicycle Master Plan (City of Manteca 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 bicycle 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.

City of Manteca Public Facilities Implementation Plan

The City of Manteca's PFIP (City of Manteca 1993) 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 (i.e., water, sewer collection, drainage, and transportation) necessary to accommodate the new demands. Public improvements are timed to ensure the LOS targets for each service are reasonably maintained.

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 envisioned that the updated PFIP fee would

cover the costs of city roadway improvements needed to accommodate growth through General Plan buildout. In addition, a fee to cover at least a portion of all the costs of interchange construction is being considered. However, since the updated PFIP has not yet been adopted by the City Council (adoption is expected in 2010), it is unknown whether the updated PFIP would cover the full cost of constructing all the projects identified in the PFIP project list.

Existing Conditions Analysis

This section describes the operations of the transportation system near the proposed ARBPRC site under existing conditions. The roadway, bicycle, pedestrian, and transit systems are considered in this analysis.

Roadway System

The roadway operations analysis evaluated the following key intersections and freeway facilities:

Intersections

1. Main Street/SR 120 Westbound Ramps
2. Main Street/SR 120 Eastbound Ramps
3. Main Street/Atherton Drive
4. Main Street/Woodward Avenue
5. Van Ryn Avenue/Industrial Park Drive
6. Van Ryn Avenue/Woodward Avenue
7. Woodward Avenue/Pillsbury Road
8. Woodward Avenue/Atherton Drive
9. Woodward Avenue/Moffat Boulevard
10. Moffat Boulevard/SR 99 Southbound Off-Ramp
11. Austin Road/Graves Road
12. Austin Road/SR 99 Northbound Ramps
13. Moffat Boulevard/Austin Road/SR 99 Southbound On-Ramps
14. Austin Road/Yosemite Avenue
15. Jack Tone Road/Yosemite Avenue
16. Jack Tone Road/Graves Road
17. Sedan Avenue/Main Street
18. Sedan Avenue/Austin Road
19. Jack Tone Road/W. River Road
20. Jack Tone Road/Santos Avenue

21. Jack Tone Road/SR 99 Northbound Slip on-ramp*
22. Jack Tone Road/Colony Road/SR 99 Southbound Ramps
23. Colony Road/SR 99 Northbound Ramps/Hoff Road
24. Jack Tone Road/SR 99 Southbound Ramps
25. Austin Road/Ripon Road
26. Jack Tone Road/Ripon Road

* Note that intersection 21 is an uncontrolled entry to an onramp and is not subject to intersection delay. Therefore, the LOS at this intersection is not analyzed or included in any of the tables.

Freeway Mainline Segments

1. SR 120 between I-5 and Yosemite Avenue
2. SR 120 between Yosemite Avenue and Airport Way
3. SR 120 between Airport Way and Union Road
4. SR 120 between Union Road and Main Street
5. SR 120 between Main Street and SR 99
6. SR 99 between SR 120 and Austin Road-Moffat
7. SR 99 between Austin Road and Jack Tone Road
8. SR 99 between Jack Tone Road and Wilma Avenue
9. SR 99 between Wilma Avenue and Main Street
10. SR 99 south of Main Street
11. SR 99 between SR 120 and Yosemite Avenue
12. SR 99 between Yosemite Avenue and Lathrop Road
13. SR 99 between Lathrop Road and French Camp Road
14. SR 99 north of French Camp Road
15. I-5 between SR 120 and I-205
16. I-5 between SR 120 and Louise Avenue

Methods of Analysis

The operations of roadway facilities are described in terms of LOS. LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels are defined, from LOS A, which represents completely uncongested operating conditions, to LOS F, which represents oversaturated operating conditions. LOS E represents at-capacity operations. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions.

Signalized Intersections

The LOS methodology approved by the City analyzes traffic operations at signalized intersections based on average vehicular control delay, as calculated using the methods described in Chapter 16 of the *Highway Capacity Manual (HCM)* (Transportation Research Board 2000). 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 or SimTraffic software program and is correlated to a LOS designation, as shown in Table 5.9-1.

TABLE 5.9-1

SIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Type of Flow	General Description	Maneuverability	Average Control Delay Per Vehicle (in Seconds)
A	Free flow	Very slight or no delay. If signalized, conditions are such that no approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.	Turning movements are easily made, and nearly all drivers find freedom of operation.	≤ 10.0
B	Stable flow	Slight delay. If signalized, an occasional approach phase is fully utilized.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted in groups of vehicles.	10.1 to 20.0
C	Stable flow	Acceptable delay. If signalized, a few drivers arriving at the end of a phase must wait through one signal cycle.	Backups may develop behind turning vehicles. Most drivers feel somewhat restricted.	20.1 to 35.0
D	Approaching unstable flow	Tolerable delay. Delays may be substantial during short periods, but excessive backups do not occur.	Maneuverability is severely limited during short periods because of temporary backups.	35.1 to 55.0
E	Unstable flow	Intolerable delay. Delay may be great, up to several signal cycles.	There are typically long queues of vehicles waiting upstream of the intersection.	55.1 to 80.0
F	Forced flow	Excessive delay.	Breakdown conditions. Backups from other locations restrict or prevent movement. Volumes may vary widely, depending primarily on downstream conditions.	> 80.0

Source: Transportation Research Board 2000.

The decision as to whether to use Synchro or SimTraffic depends on location. For more isolated intersections, Synchro was used for the analysis. However, in areas with closely spaced intersections, SimTraffic was used since the simulation software more accurately captures the effects of queue spillback and highly congested conditions. SimTraffic was used to analyze the following intersections:

- Main Street/SR 120 Westbound Ramps
- Main Street/SR 120 Eastbound Ramps
- Main Street/Atherton Drive

- Woodward Avenue/Moffat Boulevard
- Moffat Boulevard/SR 99 Southbound Off-Ramp
- Austin Road/SR 99 Northbound Ramps
- Moffat Boulevard/Austin Road/SR 99 Southbound On-Ramps
- Jack Tone Road/Santos Avenue
- Jack Tone Road/SR 99 Northbound Slip on-ramp
- Jack Tone Road/Colony Road/SR 99 Southbound Ramps
- Colony Road/SR 99 Northbound Ramps/Hoff Road
- Jack Tone Road/SR 99 Southbound Ramps

Unsignalized Intersections

Operations of the unsignalized study intersections were evaluated using the methodology contained in Chapter 17 of the HCM. LOS ratings for stop sign-controlled intersections are based on the average control delay expressed in seconds per vehicle. At two-way or side-street stop-controlled intersections, the control delay is calculated for each movement, not for the intersection as a whole, and the LOS is based on the minor-street movement with the highest delay. For all-way stop-controlled locations, a weighted average delay for the entire intersection is calculated. Table 5.9-2 summarizes the relationship between delay and LOS for unsignalized intersections.

TABLE 5.9-2

STOP-CONTROLLED INTERSECTION LEVEL OF SERVICE CRITERIA

LOS	General Description	Average Control Delay Per Vehicle (in Seconds)
A	Little to no delay for controlled movements.	≤ 10.0
B	Some delay for controlled movements.	10.1 to 15.0
C	Moderate delay for controlled movements.	15.1 to 25.0
D	Significant delay for controlled movements.	25.1 to 35.0
E	Severe delay and congestion.	35.1 to 50.0
F	Total breakdown with extreme delays.	> 50.0

Source: Highway Capacity Manual, Transportation Research Board, 2000.

Peak Hour Signal Warrants

A peak-hour signal warrant analysis was conducted for all unsignalized study intersections with a LOS of E or F. The analysis applied the peak-hour traffic signal warrant recommended in the *California Manual on Uniform Traffic Control Devices* (MUTCD) (Caltrans 2006). 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 peak-hour signal warrant is satisfied, the decision to install a signal should not be based solely upon this factor. The City of Manteca, San Joaquin County, or Caltrans regularly monitor

traffic conditions and accident data, and evaluate the full set of warrants in order to prioritize and program intersections for signalization.

Freeway Mainline Segments

Freeway mainline segments were evaluated using two-way ADT volumes, which were estimated by factoring AM and PM peak hour counts based on peak-hour-to-daily factors from the Caltrans Transportation System Network database and the California Freeway Performance Measurement System (PeMS). The LOS was determined using the thresholds in Table 5.9-3. These thresholds were taken from the City of Stockton General Plan Draft Environmental Impact Report (December 2006) and were derived from density ranges specified in the HCM.

TABLE 5.9-3

MANTECA FREEWAY SEGMENT LEVEL OF SERVICE THRESHOLDS

Number of Lanes	LOS A	LOS B	LOS C	LOS D	LOS E
4	27,600	45,200	63,600	77,400	86,400
6	41,400	67,800	95,400	116,100	129,600
8	55,200	90,400	127,200	154,800	172,800
10	69,000	113,000	159,000	193,500	216,000

Source: Stockton General Plan Draft Environmental Impact Reports, City of Stockton, December 2006; Highway Capacity Manual, Transportation Research Board, 2000.

Note that analyses of freeway ramp merge, diverge, and weaving areas were not included as part of this analysis. These facilities are not included for the following reasons:

- The City of Manteca, SJCOG, and Caltrans have partnered to ultimately reconstruct the Airport Way, Union Road, and Main Street interchanges in Manteca. The Project Study Report (PSR) for the Union Road interchange is complete, the PSR for the Airport Way interchange is underway, and the PSR for the Main Street interchange is a future priority. The new interchanges will be designed to accommodate the traffic at the ramp terminal intersections at LOS D or better and will construct improvements to the ramp merge and diverge areas, which may include auxiliary lanes, ramp meters, and/or extended merging and diverging areas. The Project Reports for the interchange improvements will specify the exact modifications proposed as part of each interchange. Since these interchanges on SR 120 are expected to be reconstructed in the future (and the project is expected to pay into the fee program to improve these interchanges), it is not necessary to further study these ramp merge and diverge areas.

- As described later in this document, SR 99 between the Arch Rd, interchange and Main Street (Ripon) interchange operates at an unacceptable LOS E or F under existing conditions. Since ramp merge and diverge operations are constrained by unacceptable freeway mainline conditions, any detailed analysis of the ramp merge/diverge or weaving areas would show similar unacceptable operations. Therefore, additional analyses are unnecessary. Additionally, Caltrans has no plans to widen the SR 99 mainline south of SR 120 in the future and freeway mainline and ramp merge/diverge operations are expected to remain at unacceptable levels without new mainline lanes.

This approach is consistent with the intent of CEQA, which does not require "perfection but… adequacy, completeness, and a good-faith effort at full disclosure" (CEQA Guidelines Section 15151).

Roadway System Operations Analysis Results

To provide a baseline for assessing the impacts of the proposed ARBPRC, an existing conditions analysis was conducted. The analysis included both intersections and freeway mainline segments. Intersections were analyzed in the vicinity of the proposed project where the greatest effects of the project would occur. Freeway mainline sections were analyzed both inside and outside of this immediate influence area and capture the potential regional effects of the project. Freeway mainline segments were evaluated using two-way daily traffic volumes obtained by factoring AM and PM peak hour traffic counts that were collected in the spring of 2008.

Intersection Operations

Morning peak period (6:30 to 8:30 AM) and evening peak period (4:00 to 6:00 PM) intersection turning movement counts were collected for all study intersections in January and February of 2008. Traffic counts from 2008 were used because they reasonably reflect current conditions. Several 2009 traffic counts have been collected in some locations and these more recent counts have similar or slightly lower traffic volumes when compared to the 2008 counts. This slight decrease in traffic volumes is consistent with statewide and national trends, and reflects the current economic downturn.

The counts were collected midweek on a day with school in session and clear weather to ensure that the counts could accurately reflect "typical" weekday peak traffic conditions in the area. Figures 5.9-4a and 5.9-4b display the peak hour traffic volumes, lane configurations, and traffic control devices at the study intersections under existing conditions. Table 5.9-4 presents the results of the peak hour intersection operations analysis (in terms of delay and LOS) under existing conditions. The detailed technical calculations are contained in Appendix G.

The results in the table below indicate that all the study intersections operate at an acceptable LOS under existing conditions.

Freeway Segment Operations

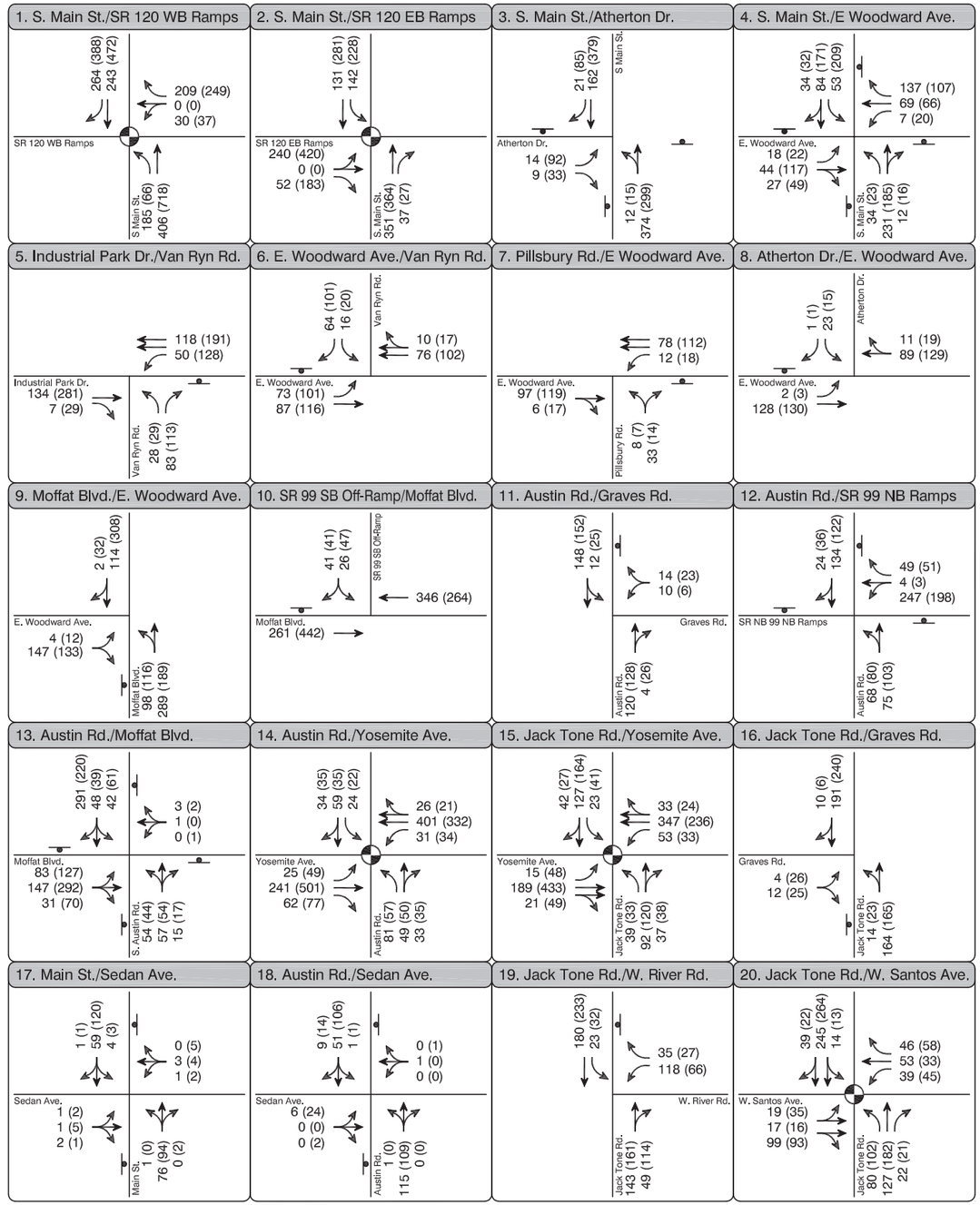
Freeway mainline segments were analyzed using two-way ADT volumes and existing number of lanes for each study freeway segment. Table 5.9-5 displays the results of the existing conditions freeway analysis. As shown in Table 5.9-5, nine of the sixteen freeway segments studied operate at LOS E or F, with the majority of the unacceptable operations occurring on SR 99.

TABLE 5.9-4

INTERSECTION LEVEL OF SERVICE – EXISTING CONDITIONS

Intersection	Control	Peak Hour	Existing Conditions	
			Delay	LOS
1. Main St./SR 120 Westbound Ramps	Signal	AM PM	8 8	A A
2. Main St./SR 120 Eastbound Ramps	Signal	AM PM	19 28	B C
3. Main St./Atherton Dr.	All-way Stop-Controlled	AM PM	12 30	B D
4. Main St./Woodward Ave.	All-way Stop-Controlled	AM PM	11 14	B B
5. Van Ryn Ave./Industrial Park Dr.	Side-Street Stop-Controlled	AM PM	12 16	B C
6. Van Ryn Ave./Woodward Ave.	Side-Street Stop-Controlled	AM PM	13 13	B B
7. Woodward Ave./Pillsbury Rd.	Side-Street Stop-Controlled	AM PM	9 10	A A
8. Woodward Ave./Atherton Dr.	Side-Street Stop-Controlled	AM PM	10 10	B B
9. Woodward Ave./Moffat Blvd.	Side-Street Stop-Controlled	AM PM	11 15	B C
10. Moffat Blvd./SR 99 Southbound Off-Ramp	Side-Street Stop-Controlled	AM PM	13 14	B B
11. Austin Rd./Graves Rd.	Side-Street Stop-Controlled	AM PM	10 10	A A
12. Austin Rd./SR 99 Northbound Ramps	All-way Stop-Controlled	AM PM	11 12	B B
13. Moffat Blvd./Austin Rd./SR 99 Southbound On-Ramps	All-way Stop-Controlled	AM PM	12 21	B C
14. Austin Rd./Yosemite Ave.	Signal	AM PM	26 29	C C
15. Jack Tone Rd./Yosemite Ave.	Signal	AM PM	15 15	B B
16. Jack Tone Rd./Graves Rd.	Side-Street Stop-Controlled	AM PM	10 12	B B
17. Sedan Ave./Main St.	Side-Street Stop-Controlled	AM PM	10 11	B B
18. Sedan Ave./Austin Rd.	Side-Street Stop-Controlled	AM PM	10 11	B B
19. Jack Tone Rd./W. River Rd.	Side-Street Stop-Controlled	AM PM	14 15	B B
20. Jack Tone Rd./Santos Ave.	Signal	AM PM	23 22	C C
22. Jack Tone Rd./Colony Rd./SR 99 Southbound Ramps	Signal	AM PM	12 13	B B
23. Colony Rd./SR 99 Northbound Ramps/Hoff Rd.	All-way Stop-Controlled	AM PM	11 11	B B
24. Jack Tone Rd./SR 99 Southbound Ramps	Signal	AM PM	8 8	A A
25. Austin Rd./Ripon Rd.	All-way Stop-Controlled	AM PM	9 10	A A
26. Jack Tone Rd./Ripon Rd.	Signal	AM PM	30 31	C C

Source: Fehr & Peers, 2009.



Source: Fehr & Peers

PBS&J

FIGURE 5.9-4A

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

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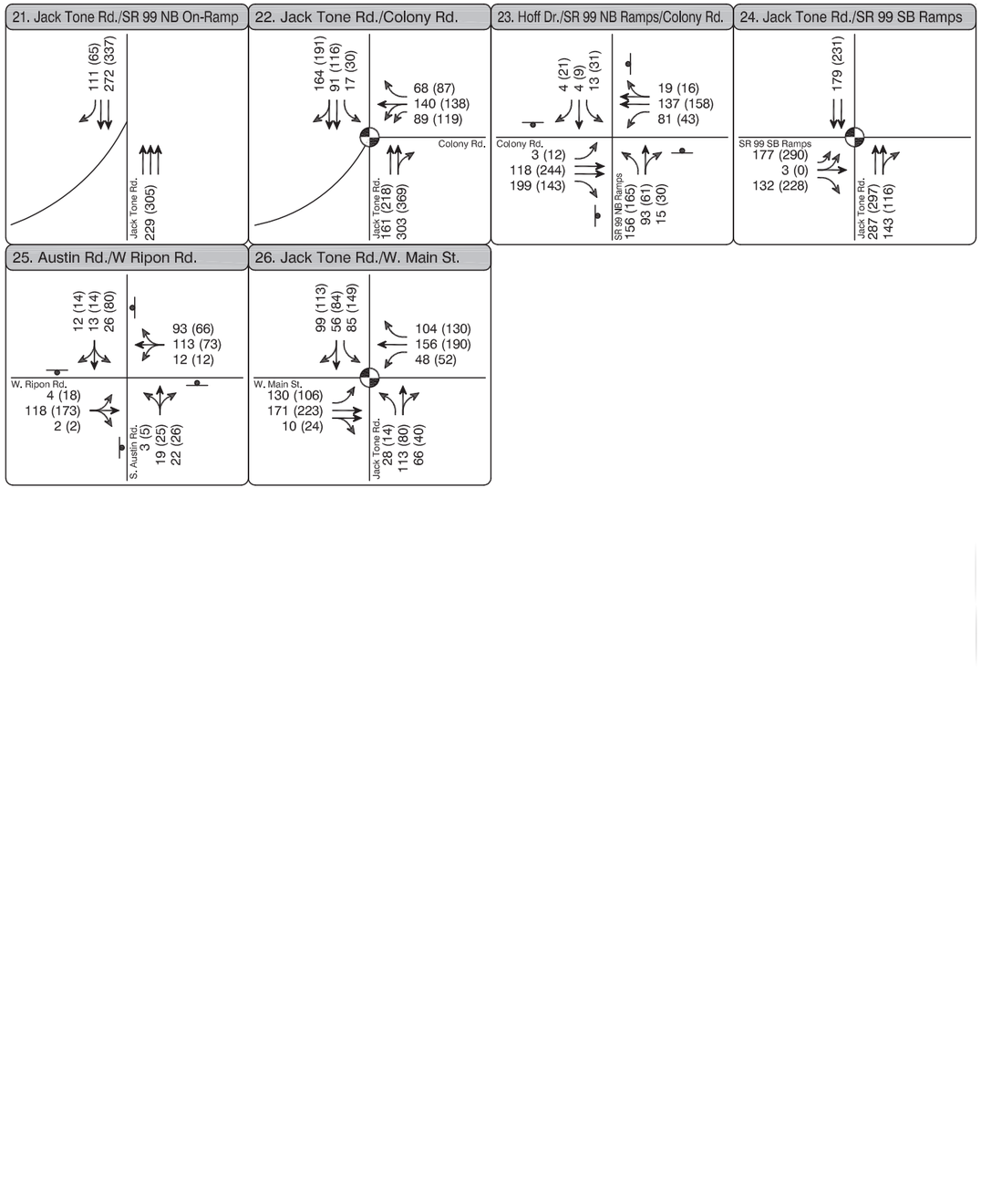
Austin Road Business Park and Residential Community



Source: Fehr & Peers

PBS&J

FIGURE 5.9-4B

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

TABLE 5.9-5

FREEWAY LEVEL OF SERVICE – EXISTING CONDITIONS

Freeway	Segment	Lanes	Existing Conditions	
			ADT	LOS
SR 120	I-5 to Yosemite Avenue	4	78,300	**E**
	Yosemite Avenue to Airport Way	4	76,800	D
	Airport Way to Union Road	4	75,000	D
	Union Road to Main Street	4	74,500	D
	Main Street to SR 99	4	68,200	D
SR 99	South of Main Street (Ripon)	6	113,000	D
	Main Street to Wilma Avenue	6	128,600	**E**
	Wilma Avenue to Jack Tone Road	6	129,000	**E**
	Jack Tone Road to Austin Road	6	134,700	**F**
	Austin Road to SR 120	6	129,200	**E**
	SR 120 to Yosemite Avenue	4	93,500	**F**
	Yosemite Avenue to Lathrop Road	4	80,100	**E**
	Lathrop Road to French Camp Road	4	83,800	**E**
	North of French Camp Road	4	81,600	**E**
I-5	South of SR 120	10	155,800	C
	SR 120 to Louise Avenue	6	112,800	D

Notes:
Bold type indicates unacceptable operations.
Source: Fehr & Peers, 2009.

EXISTING PLUS PROJECT ANALYSIS

This section describes the potential transportation impacts of the proposed project under existing plus project conditions. This section also recommends mitigation measures to reduce the significance of the project-related impacts to the transportation system. To provide a basis for determining significant impacts that require mitigation, this section begins with a listing of the various significance criteria used in this analysis. This discussion is followed by an explanation of the impact analysis methodology and results. Lastly, specific impact statements with corresponding mitigation measures are presented.

Standards of Significance

As described in the Regulatory Framework section, LOS D is considered the minimum acceptable LOS for this analysis. However, to determine if the project leads to a significant impact, the standards of significance from the *City of Manteca Draft Transportation Impact Analysis Guidelines* (see Appendix G) are used because the City does not have any other sources defining transportation impacts. In addition, these guidelines have been used for several other EIRs recently conducted in the area. It should also be noted that the *Draft Transportation Impact Analysis Guidelines* are being considered along with updates to the City's Circulation Element, and may be adopted prior to the certification of this EIR.

Intersections

The *Draft Transportation Impact Analysis Guidelines* define a project-related intersection impact if the addition of project traffic causes an intersection operating at an acceptable LOS under existing or

cumulative no project conditions to degrade to an unacceptable LOS (as defined by City of Manteca, San Joaquin County, City or Ripon, or Caltrans LOS guidelines).

For intersections that operate at an unacceptable LOS E or F without the project, meeting any of the following conditions would result in a significant project impact:

- The addition of project traffic increases the average vehicle delay for a signalized intersection by three (3) seconds or more, or
- The addition of project traffic increases the average delay for an all-way stop-controlled intersection by three (3) seconds or more and the intersection meets the one hour peak hour signal warrant under the AM or PM peak hour, or
- The addition of project traffic increases the highest delayed side-street movement for a side-street stop-controlled intersection by three (3) seconds or more and the intersection meets the one hour peak hour signal warrant under the AM or PM peak hour.

Freeway Mainline Segments

A freeway mainline segment impact is defined when the addition of project traffic causes a freeway segment operating at an acceptable LOS under Existing or Cumulative No Project Conditions to degrade to an unacceptable LOS E or F. For freeway mainline segments that operate at an unacceptable LOS without the project, the *Draft Transportation Impact Analysis Guidelines* do not define impacts freeway segments analyzed using ADT volumes. However, based on the threshold of significance set for peak hour analysis, the project would have a significant impact on a freeway mainline segment if it would:

- Add more than 100 vehicles per day to a freeway segment that already operates (or is projected to operate) at an unacceptable level without the project.

Pedestrian, Bicycle, and Transit Systems

The *Draft Transportation Impact Analysis Guidelines* do not currently have thresholds for impacts on the pedestrian, bicycle, or transit systems. For the purposes of this EIR, an impact is considered significant if the project would:

Pedestrian System

- Disrupt or interfere with existing or planned pedestrian facilities.
- Create a highly circuitous pedestrian circulation pattern that would discourage walking to local destinations or transit facilities.
- Result in unsafe conditions for pedestrians, including unsafe pedestrian/bicycle or pedestrian/vehicle conflicts.
- Create an inconsistency with policies related to pedestrian systems set forth in the City General Plan.

Bicycle System

- Disrupt or interfere with existing or planned bicycle facilities.
- Result in unsafe conditions for bicycles, including unsafe bicycle/pedestrian or bicycle/vehicle conflicts.
- Create an inconsistency with policies related to bicycle systems set forth in the City General Plan.

Transit System

- Disrupt or interfere with existing or planned public transit services or facilities.
- Create an inconsistency with policies concerning transit systems set forth in the City General Plan.

At-Grade Rail Crossings

- Add traffic to an at-grade railroad crossing that has a demonstrated record of an above-average collision history.

Project Description

The ARBPRC proposes to develop over 1,048 acres according to a mixed-use land plan. The proposed land uses are described in Chapter 2, Project Description. Figure 2-2 (see Chapter 2, Project Description) shows the project site plan. The land use mix and building intensity (floor-to-area ratio, dwelling units per acre) within the project site were determined through discussions between the City and the project applicant. Additional details about the specific mix of uses allowed in each land use designation are provided in the trip generation section below.

New Roadways

As the ARBPRC project develops, it is assumed that the project applicant will construct internal project roadways that are necessary to serve the project traffic. As shown on Figure 2-2, the project is assumed to extend Atherton Drive south of Woodward Avenue into the site and construct a portion of the McKinley Avenue extension through the southern portion of the project. In addition, several other internal arterial/collector streets are shown on the site plan. As part of these roadway connections, improvements to the Woodward Avenue/Atherton Drive and Austin Road/Sedan Avenue (future McKinley Avenue) intersections are assumed to be completed by the project applicant. Figure 2-2 also shows a new interchange in the southern portion of the site along the McKinley Avenue extension. As described later in this chapter, this interchange is important in providing access to this site and other development in the area; however, this project is not proposing to construct this new interchange.

Methods of Analysis

To determine the project's impact on the transportation system, the number of new vehicle trips was estimated using data from the Institute of Transportation Engineers. Next, a version of the SJCOG

TDF model that has been modified to better reflect travel patterns in Manteca was updated to reflect the proposed project land uses and trip generation. The results of the SJCOG TDF model were processed using a traffic forecasting technique known as the difference method. The difference method computes the difference between "plus project" and "no project" traffic volumes from the model and adds this difference to the existing traffic counts. This procedure is routinely used in traffic forecasting because it accounts for potential inaccuracies in the base year model, which if unchecked, could affect the "with project" forecasts. Finally, the traffic forecasts derived from the difference method were analyzed using the traffic operations analysis methodologies described in the previous section.

Trip Generation

The trip generation characteristics of a large mixed-use site like the ARBPRC are complex. Fehr & Peers prepared a detailed trip generation memorandum (presented in Appendix G) that describes the source of the trip generation data and the methodology behind the trip reductions to account for internalized uses and trip chaining[2] within the project area. In addition, pass-by and diverted-linked trips to the retail uses are also considered in the trip generation calculation. Table 5.9-6 displays the expected number of gross and net new trips generated by the project during the AM and PM peak hours, and on a daily basis.

As shown in Table 5.9-6, the ARBPRC project is expected to generate approximately 83,000 daily, 5,090 AM peak hour, and 8,720 PM peak hour external trips.[3] This trip generation reflects an internalization and pass-by/diverted linked trip rate of 26 percent under daily conditions, 23 percent under AM peak hour conditions, and 25 percent under PM peak hour conditions. As described in the trip generation memorandum, the projected level of internal/pass-by/diverted linked trips is generally consistent with findings from other similar mixed-use sites from across the country.

Through a series of minor model adjustments, Fehr & Peers improved the validation of the base year SJCOG TDF model to better match existing traffic counts on roadways in the study area. This improved model was then further modified to include the proposed project's land uses and assumed roadway connections. Some minor adjustments in land use inputs were necessary such that the model produced external vehicle trips that adequately matched the trip generation totals in Table 5.9-6. This is a critical step because output from the TDF model will be used to measure changes in traffic volumes due to the project.

2 A trip chain is a series of trips that occur between a primary origin and destination. An example is a series of trips between an office, store, daycare, and home.

3 External trips are defined as those trips that leave the project area. These trips are in contrast to internal trips, which are trips that begin and end within the project area and do not impact regional transportation facilities.

TABLE 5.9-6

AUSTIN ROAD BUSINESS PARK AND RESIDENTIAL COMMUNITY TRIP GENERATION

Land Use	Area KSF/Units	ITE Code	Daily				AM Peak Hour				PM Peak Hour			
			Rate[1]	Total Trips	In	Out	Rate[1]	Total Trips	In	Out	Rate[1]	Total Trips	In	Out
Heavy Industrial District: 83% High Cube Warehouse, 17% Light Industrial														
High-Cube Warehouse	4,304	152	2.25	10,028	5,014	5,014	0.12	518	337	181	0.11	482	159	323
Light Industrial	807	110	7.36	6,730	3,365	3,365	1.08	990	871	119	1.26	1,151	138	1,012
Subtotal	***5,380***	***--***	***--***	***16,758***	***8,379***	***8,379***	***--***	***1,508***	***1,208***	***300***	***--***	***1,633***	***297***	***1,336***
Business/Industrial/Professional Non-Heavy Industrial District: 80% Office Park, 10% Retail, 10% Mini-Storage Uses														
Office Park	203	750	12.44	2,522	1,261	1,261	1.98	402	358	44	1.69	343	48	295
Retail	608	110	7.30	4,443	2,221	2,221	1.03	629	553	75	1.17	713	86	627
Mini-Storage	203	151	2.39	486	243	243	0.15	30	18	12	0.26	53	27	26
Subtotal	***1,014***			***7,451***	***3,725***	***3,725***		***1,061***	***929***	***132***		***1,109***	***161***	***948***
General Commercial														
Shopping Center	1,178	820	28.64	33,743	16,871	16,871	0.56	660	403	257	2.82	3,321	1,627	1,694
Subtotal	***1,178***	***820***	***28.64***	***33,743***	***16,871***	***16,871***	***0.56***	***660***	***403***	***257***	***2.82***	***3,321***	***1,627***	***1,694***
Commercial Mixed Use														
Shopping Center	410	820	41.44	16,992	8,496	8,496	0.86	354	216	138	3.99	1,637	802	835
Office Park	91	750	14.91	1,357	679	679	2.74	249	222	27	2.27	207	29	178
Apartment	828	220	6.65	5,506	2,753	2,753	0.51	422	84	338	0.62	513	334	180
Subtotal	***501/828***			***23,856***	***11,928***	***11,928***		***1,025***	***522***	***503***		***2,358***	***1,165***	***1,193***
Residential														
Low/Medium Density Residential	2,358	210	9.57	22,566	11,283	11,283	0.75	1,769	442	1,326	1.01	2,382	1,500	881
High Density Residential	1,012	220	6.65	6,730	3,365	3,365	0.51	516	103	413	0.62	627	408	220
Subtotal	***3,370***	***--***	***--***	***29,296***	***14,648***	***14,648***	***--***	***2,285***	***545***	***1,739***	***--***	***3,009***	***1,908***	***1,101***
Public/Quasi-Public/EXPO Center														
Expo Center[2]	122	N/A	5.84	712	356	356	0.65	79	63	16	1.75	214	65	149
Subtotal	***122***	***--***	***--***	***712***	***356***	***356***	***--***	***79***	***63***	***16***	***--***	***214***	***65***	***149***
Gross Trips				111,816	55,908	55,908	--	6,618	3,670	2,948	--	11,643	5,222	6,420
Internal Trips				22,417	11,209	11,209	--	1,465	732	732	--	2,051	1,025	1,025
Retail Pass-by Trips				6,370	3,185	3,185	--	66	38	28	--	875	429	447
Net New Trips				**83,029**	**41,514**	**41,514**	**--**	**5,087**	**2,900**	**2,187**	**--**	**8,717**	**3,768**	**4,948**

Notes:
1 Trip Rates based on data published in *Trip Generation 8th Edition* (ITE, 2008). For non-residential uses these rates represent fitted curve, rather than average rate, where available.
2 Trip rate estimated based on previous studies of similar facilities and represents a "non-event" day, see Appendix G.
Source: Fehr & Peers, 2009.

Trip Distribution

With the trip generation of the SJCOG TDF model matching the data shown in Table 5.9-6, a "select zone" run of the model was performed to estimate the project's trip distribution. The results of this trip distribution analysis are shown in Figure 5.9-5. This figure is intended to convey the general directionality of external trips. Because the project also includes several new street connections, the "existing plus project" volumes also reflect expected changes in existing travel patterns. Differences between "existing" and "existing plus project" volumes may not match a calculated project-only traffic volume (based on Table 5.9-6 and Figure 5.9-5) due to this redistribution effect.

Traffic Operations Analysis Results

The results of the existing plus project traffic forecasts are shown on the following pages. Figures 5.9-6a and 5.9-6b show the existing plus project peak hour traffic volumes and intersection lane configurations. Table 5.9-7 summarizes the magnitude of increase in AM and PM peak hour traffic at some key roadway segments near the project site. As shown, the traffic on some roadway segments is expected to increase by more than 500 percent. This level of increase, while dramatic, is not unexpected given that the project is expected to generate more than 83,000 daily trips.

TABLE 5.9-7

COMPARISON OF ROADWAY SEGMENT VOLUMES

Segment	Existing Conditions AM (PM) Roadway Segment Volume	Existing Plus Project Conditions AM (PM) Roadway Segment Volume	Percent Change in Roadway Segment Volume
1. Main St. between SR 120 and Atherton Dr.	571 (855)	850 (1,570)	49% (46%)
2. Woodward Ave. between Main St. and Van Ryn Ave.	300 (420)	740 (1,520)	147% (262%)
3. Van Ryn Ave. south of Industrial Park Dr.	168 (299)	310 (1,040)	85% (248%)
4. Moffat Blvd. between Woodward Ave. and SB SR 99 Off-Ramp	648 (746)	1,500 (1,940)	131% (160%)
5. Austin Rd. between NB SR 99 Ramps and Moffat Blvd.	524 (503)	2,150 (2,770)	310% (451%)
6. Austin Rd. north of Ripon Rd.	167 (217)	920 (1,400)	451% (545%)

Source: Fehr & Peers, 2009.

The "existing plus project" traffic forecasts are not a simple layering or addition of the ARBPRC project trips on top of existing counts. Rather, the results reflect the regional trip redistribution that would occur if a project as large as the ARBPRC were to be developed under existing conditions. Put another way, if the ARBPRC were developed under existing conditions, there would be a wide variety of new residential, workplace, service, and shopping choices for residents of Southern San Joaquin and Northern Stanislaus Counties.

These new land use opportunities would change regional travel patterns as people live, work, and shop at the ARBPRC project site. Some existing trips between San Joaquin and Stanislaus County would be intercepted and drawn to the project site rather than going to more distant areas. The

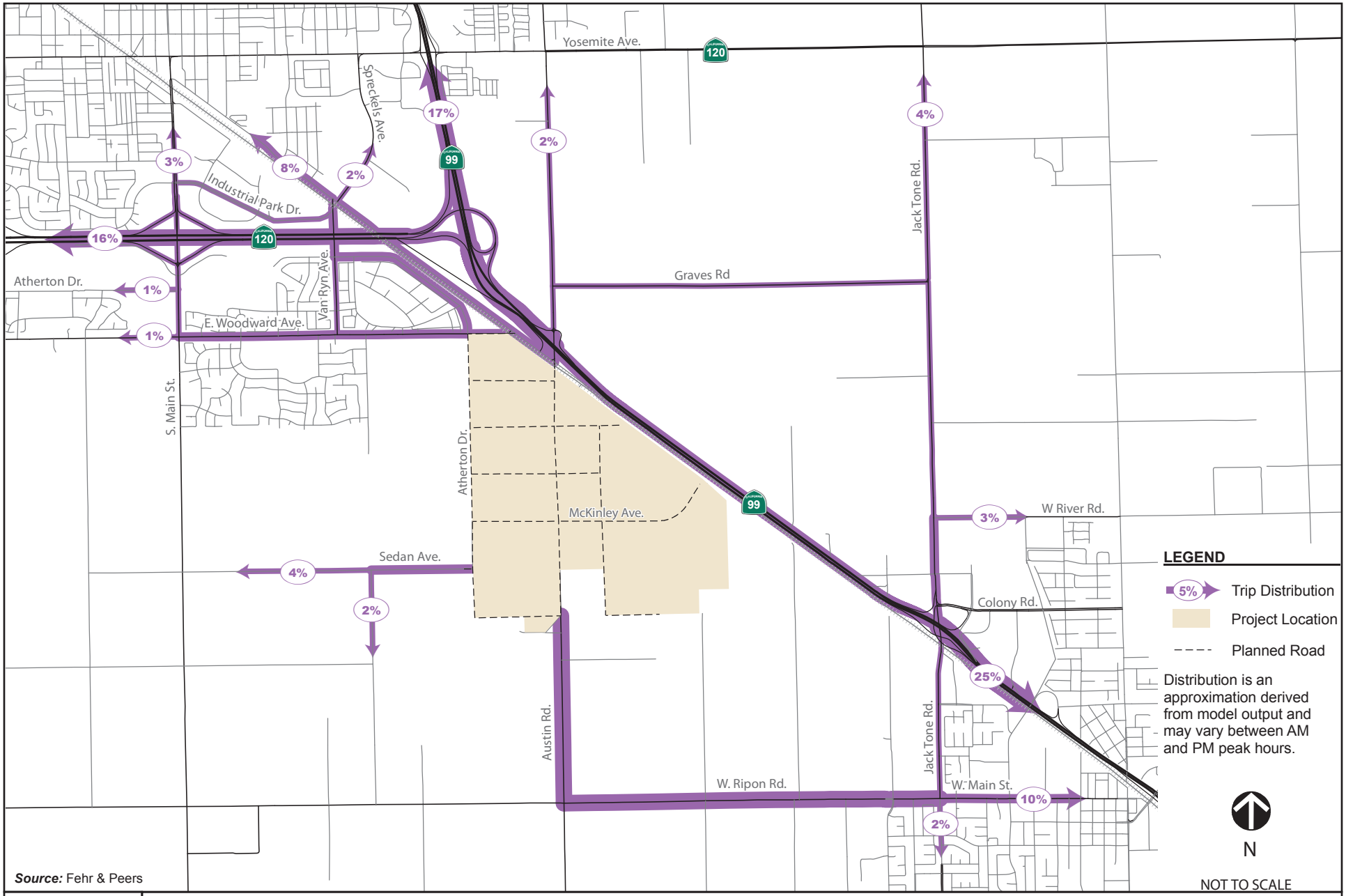


FIGURE 5.9-5

Project Trip Distribution - Existing Plus Project Conditions

existing travel patterns within Manteca and Ripon would change in response to the uses at the ARBPRC site. Some trips that passed through the study area under no project conditions would be redirected to other routes under plus project conditions because of the limited roadway capacity in the area. Lastly, some discretionary trips may instead be made at different times, days, or be suppressed altogether. The results of these complex interactions are captured in the SJCOG TDF model. Project impacts would be overstated if ARBPRC-generated traffic were simply added to existing traffic counts.

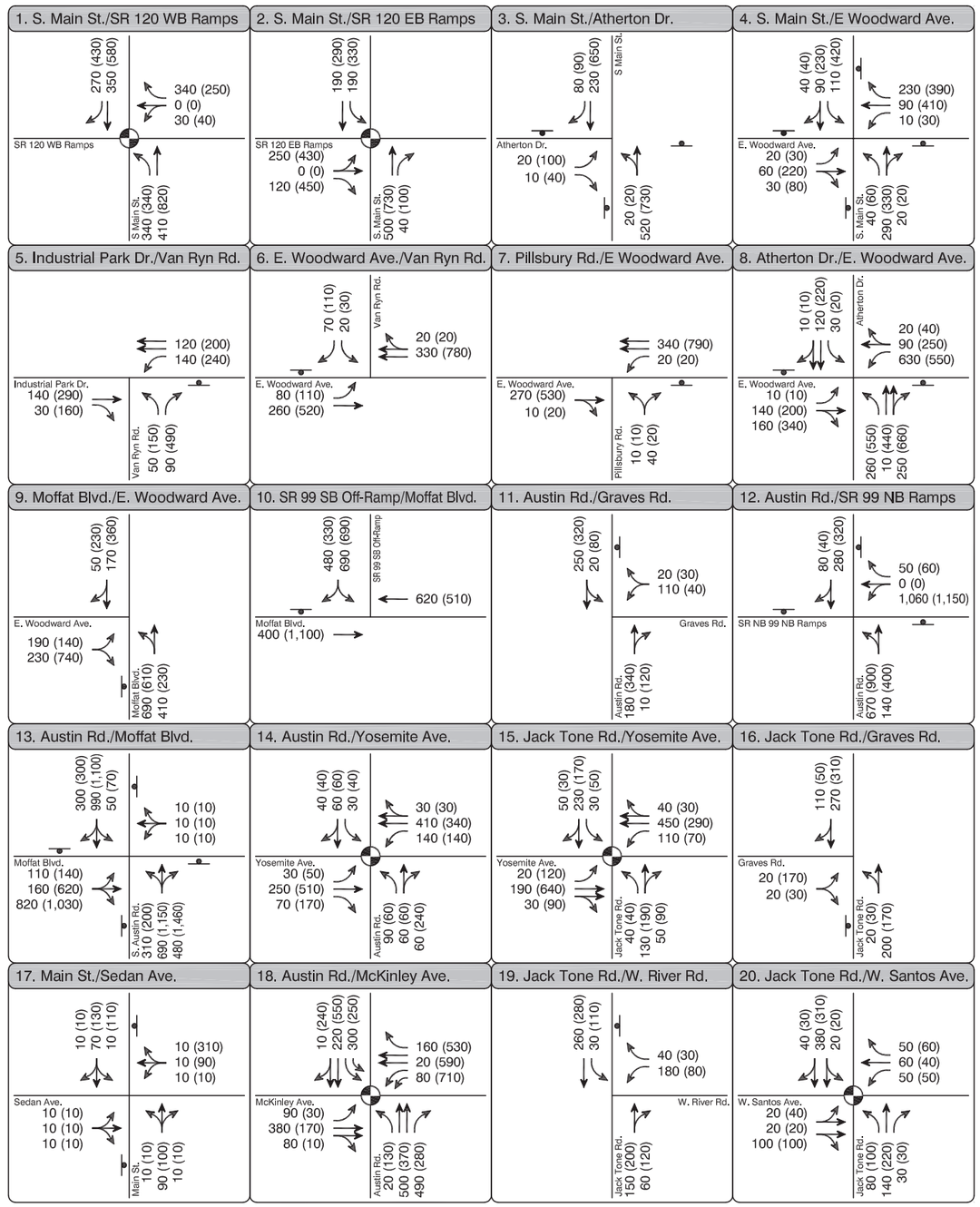
The traffic data presented in this section represents a worst-case scenario for existing plus project conditions. In reality, a project of this magnitude would take years to build out and would not be at full occupancy in the near future. Moreover, the project would probably not be able to reach full occupancy with the existing access provisions and constraints. Congestion entering and exiting the project would limit the viability of the site for some businesses and residents and full buildout may not be achieved without a variety of infrastructure improvements to improve site access.

Intersection Operations

Table 5.9-8 summarizes the results of the existing plus project intersection LOS analysis. The results are compared to the existing conditions analysis to highlight changes in delay and LOS caused by the project. Detailed intersection LOS calculation sheets are presented in Appendix G.

The results in Table 5.9-8 indicate that 10 of the 26 study intersections would operate at an unacceptable LOS under existing plus project conditions during the AM or PM peak hour. Additionally, a peak hour signal warrant at the unsignalized intersections indicates that the warrant is met at all locations with an unacceptable LOS in the AM or PM peak hour. See Appendix G for AM and PM peak hour signal warrant analysis under existing plus project conditions. The following list summarizes the intersections with an unacceptable LOS under existing plus project conditions. Since these intersections currently operate acceptably, the project would cause significant impacts at each location.

- Main Street/SR 120 Eastbound Ramps
- Main Street/Atherton Drive
- Main Street/Woodward Avenue
- Van Ryn Avenue/Industrial Park Drive
- Woodward Avenue/Atherton Drive
- Woodward Avenue/Moffat Boulevard
- Moffat Boulevard/SR 99 Southbound Off-Ramp
- Austin Road/SR 99 Northbound Ramps
- Moffat Boulevard/Austin Road/SR 99 Southbound On-Ramps
- Austin Road/Ripon Road



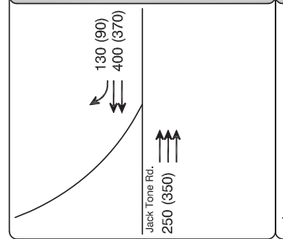
Source: Fehr & Peers

PBS&J

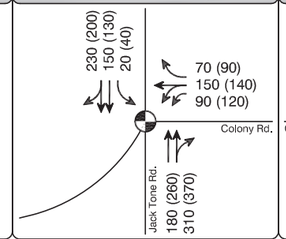
FIGURE 5.9-6A

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

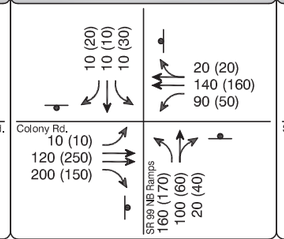
21. Jack Tone Rd./SR 99 NB On-Ramp



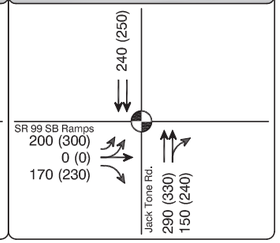
22. Jack Tone Rd./Colony Rd.



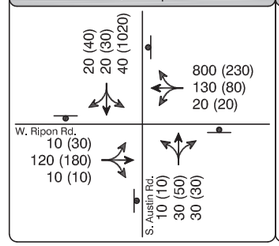
23. Hoff Dr./SR 99 NB Ramps/Colony Rd.



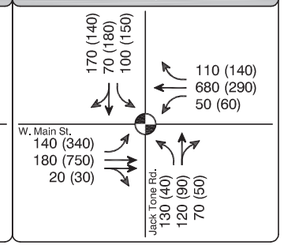
24. Jack Tone Rd./SR 99 SB Ramps



25. Austin Rd./W Ripon Rd.



26. Jack Tone Rd./W. Main St.



Source: Fehr & Peers

PBS&J

FIGURE 5.9-6B

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

TABLE 5.9-8

INTERSECTION LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

Intersection	Control	Peak Hour	Existing Conditions		Existing Plus Project Conditions	
			Delay	LOS	Delay	LOS
1. Main St./SR 120 Westbound Ramps	Signal	AM	8	A	12	B
		PM	8	A	14	B
2. Main St./SR 120 Eastbound Ramps	Signal	AM	19	B	20	C
		PM	28	C	**87**	**F**
3. Main St./Atherton Dr.	All-way Stop-Controlled	AM	12	B	11	B
		PM	30	D	**92**	**F**
4. Main St./Woodward Ave.	All-way Stop-Controlled	AM	11	B	15	C
		PM	14	B	**102**	**F**
5. Van Ryn Ave./Industrial Park Dr.	Side-Street Stop-Controlled	AM	12	B	16	C
		PM	16	C	**65**	**F**
6. Van Ryn Ave./Woodward Ave.	Side-Street Stop-Controlled	AM	13	B	18	C
		PM	13	B	28	D
7. Woodward Ave./Pillsbury Rd.	Side-Street Stop-Controlled	AM	9	A	11	B
		PM	10	A	15	B
8. Woodward Ave./Atherton Dr.	Side-Street Stop-Controlled	AM	10	B	**>150**[2]	**F**
		PM	10	B	**>150**	**F**
9. Woodward Ave./Moffat Blvd.	Side-Street Stop-Controlled	AM	11	B	**>150**	**F**
		PM	15	C	**>150**	**F**
10. Moffat Blvd./SR 99 Southbound Off-Ramp	Side-Street Stop-Controlled	AM	13	B	**>150**	**F**
		PM	14	B	**>150**	**F**
11. Austin Rd./Graves Rd.	Side-Street Stop-Controlled	AM	10	A	14	B
		PM	10	A	18	C
12. Austin Rd./SR 99 Northbound Ramps	All-way Stop-Controlled	AM	11	B	**>150**	**F**
		PM	12	B	**>150**	**F**
13. Moffat Blvd./Austin Rd./SR 99 Southbound On-Ramps	All-way Stop-Controlled	AM	12	B	**147**	**F**
		PM	21	C	**122**	**F**
14. Austin Rd./Yosemite Ave.	Signal	AM	26	C	32	C
		PM	29	C	32	C
15. Jack Tone Rd./Yosemite Ave.	Signal	AM	15	B	19	B
		PM	15	B	22	C
16. Jack Tone Rd./Graves Rd.	Side-Street Stop-Controlled	AM	10	B	13	B
		PM	12	B	18	C
17. Sedan Ave./Main St.	Side-Street Stop-Controlled	AM	10	B	11	B
		PM	11	B	23	C
18. McKinley Ave./Austin Rd.	Signal[1]	AM	10	B	24	C
		PM	11	B	31	C
19. Jack Tone Rd./W. River Rd.	Side-Street Stop-Controlled	AM	14	B	18	C
		PM	15	B	23	C
20. Jack Tone Rd./Santos Ave.	Signal	AM	23	C	25	C
		PM	22	C	20	C
22. Jack Tone Rd./Colony Rd./SR 99 Southbound Ramps	Signal	AM	12	B	11	B
		PM	13	B	13	B
23. Colony Rd./SR 99 Northbound Ramps/Hoff Rd.	All-way Stop-Controlled	AM	11	B	8	A
		PM	11	B	8	A
24. Jack Tone Rd./SR 99 Southbound Ramps	Signal	AM	8	A	9	A
		PM	8	A	11	B
25. Austin Rd./Ripon Rd.	All-way Stop-Controlled	AM	9	A	**103**	**F**
		PM	10	A	**>150**	**F**
26. Jack Tone Rd./Ripon Rd.	Signal	AM	30	C	43	D
		PM	31	C	36	D

Notes:
Bold type indicates unacceptable operations.
[1] Side-street stop-controlled under no project conditions.
[2] Delay at these locations is outside the range of the software.
Source: Fehr & Peers, 2009.

Freeway Segment Operations

Table 5.9-9 displays the results of the existing plus project conditions freeway analysis. As shown in the table, the addition of project-related traffic would degrade freeway mainline LOS to an unacceptable level or would further exacerbate unacceptable operations that were present under existing no project conditions at 13 of the 16 freeway segments.

TABLE 5.9-9

FREEWAY LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

Freeway	Segment	Lanes	Existing Conditions		Existing Plus Project Conditions	
			ADT	LOS	ADT	LOS
SR 120	I-5 to Yosemite Ave.	4	78,300	**E**	87,300	**F**
	Yosemite Ave. to Airport Way	4	76,800	D	86,000	**E**
	Airport Way to Union Rd.	4	75,000	D	85,300	**E**
	Union Rd. to Main St.	4	74,500	D	87,000	**F**
	Main St. to SR 99	4	68,200	D	73,400	D
SR 99	South of Main St. (Ripon)	6	113,000	D	137,400	**F**
	Main St. to Wilma Ave.	6	128,600	**E**	149,400	**F**
	Wilma Ave. to Jack Tone Rd.	6	129,000	**E**	146,800	**F**
	Jack Tone Rd. to Austin Rd.	6	134,700	**F**	154,600	**F**
	Austin Rd. to SR 120	6	129,200	**E**	147,900	**F**
	SR 120 to Yosemite Ave.	4	93,500	**F**	107,300	**F**
	Yosemite Ave. to Lathrop Rd.	4	80,100	**E**	90,600	**F**
	Lathrop Rd. to French Camp Rd.	4	83,800	**E**	91,900	**F**
	North of French Camp Rd.	4	81,600	**E**	89,200	**F**
I-5	South of SR 120	10	155,800	C	163,200	D
	SR 120 to Louise Ave.	6	112,800	D	114,300	D

Notes:
Bold type indicates unacceptable operations.
Source: Fehr & Peers, 2009.

Bicycle and Pedestrian System

The project site plan submitted in the development application is very generic in nature and does not show details related to the bicycle and pedestrian system within or adjacent to the project. However, it is anticipated that the project would construct sidewalks on all internal roadways, consistent with the City's standard plans.

The City's Bicycle Master Plan shows that a Class I bike path is planned along Atherton Drive between Woodward Avenue and a location due east of Tannehill Drive/Pillsbury Road intersection. In addition, the Bicycle Master Plan shows planned Class II bike lanes along Austin Road within the site and along a future eastward extension of Tannehill Drive, ending at Austin Road Because of the generic nature of the project site plan, it is unclear if the project plans to construct these facilities. In addition, the project site plan does not include any bike parking facilities, which are required by City code.

Public Transit System

The project site plan does not show any transit services or any design features to accommodate future transit use (e.g., bus turnouts, bus shelters).

Project-Specific Impacts and Mitigation Measures

This section describes the ARBPRC project-related impacts under existing conditions. Measures to reduce the significance of project impacts are also described in this section. The impacts described in this section are solely related to the proposed project and are followed by a discussion of cumulative impacts.

Mitigation Approach - Background

The need for a more complex mitigation approach is driven by the Austin Road/SR 99 interchange. This interchange is the most critical piece of transportation infrastructure near the project site and is the primary point for project traffic to access the regional roadway system. As described in the existing setting section, this interchange has an older design that no longer meets standards for vertical curvature, sight distance, or interchange spacing. While this interchange operates adequately under existing conditions, it fails when a large project like the ARBPRC builds out.

Interchange deficiencies are not uncommon for large projects like the ARBPRC, and typically, a deficient interchange can be replaced by a new interchange at the same location. Often the deficient interchange is upgraded in a phased manner to keep the initial costs lower and help with financing. However, in the case of the Austin Road interchange, the close proximity to the SR 120/SR 99 interchange and the adjacent Union Pacific Railroad tracks precludes a significant expansion of the existing interchange.

If the Austin Road/SR 99 interchange were to fail and cause queues to spill back onto the mainline, the only options would be to close the interchange (which would have significant repercussions on access to properties in southern Manteca), or to relocate a new interchange farther to the south. Based on several years of meetings between the City of Manteca, the City of Ripon, SJCOG, and Caltrans, it has been decided that the Austin Road interchange will ultimately be closed when a new interchange is built 1.5 miles to the south at an extension of McKinley Avenue The PSR for this new interchange is just now getting underway.

The reconstruction of any interchange is an expensive prospect. For example, the Union Road/ SR 120 interchange (which is expected to be completed in the next several years) is expected to cost $30 million. However, the cost of relocating the Austin Road/SR 99 interchange is considerably more expensive and has been recently estimated to cost between $110 and $160 million. This high cost is driven by a variety of factors including the close spacing of the Union Pacific Railroad and the SR 99 mainline, and the need to relocate the freeway mainline lanes to accommodate the new ramps.

Mitigation Approach – Development Threshold

Because of the high cost of relocating the Austin Rd, interchange, it is infeasible for the ARBPRC project to fully fund this improvement and mitigate full project impacts under existing plus project conditions. However, in order to get some level of development in the ARBPRC, a portion of the project could be developed such that it maximizes the capacity of the existing Austin Road/SR 99 interchange, with some minor ramp and intersection improvements (listed below). Allowing the ARBPRC project to develop up to a certain point is important to begin raising funds for the ultimate relocation of the Austin Road interchange. There are currently no other funding sources or mechanisms that could begin raising revenues in the near-term. Once the relocated interchange is in place, the ARBPRC project could continue to develop beyond the level that could be accommodated on the street system without the new interchange. Note that if this approach is selected, it will be important that traffic studies be performed as part of each development application within the ARBPRC to ensure that the traffic generated by the components of the project does not lead to unacceptable operations at the Austin Road/SR 99 interchange.

Austin Road/SR 99 Interim Interchange Improvements

Woodward Avenue/Moffat Boulevard

- Construct a southbound right turn lane.
- Widen Moffat Boulevard south of the Woodward Avenue intersection to include two lanes in each direction.
- The second northbound lane shall be trapped into the left-turn lane to westbound Woodward Avenue

Moffat Boulevard/SR 99 Southbound Off-Ramp

- Install a traffic signal.
- Widen the off-ramp as far as feasible to construct separate left and right-turn lanes at the off-ramp approach to the intersection.
- Widen the approaches and departures on Moffat Boulevard to include two lanes in each direction.

Austin Road/SR 99 Northbound Ramps

- Install a traffic signal.
- Widen the northbound Austin Road approach to accommodate a left-turn lane and shared left-through lane at the intersection.

Austin Road/Moffat Boulevard

- Install a traffic signal that is pre-empted by the crossing protection devices at the adjacent Union Pacific Railroad crossing.

- Widen the southbound approach to include a shared left-through lane and a separate right-turn lane.
- Widen south-eastbound Moffat Boulevard approach to include separate left-turn, through, and right-turn lanes.
- Widen the north-westbound departure on Moffat Boulevard to include two lanes.

A capacity analysis shown in Appendix G concluded that with the improvements listed above, approximately 10.5 percent of the project's PM peak hour trip generation could be accommodated. This level of development translates to the following equivalent amounts of land use:[4]

- 8.35 million square feet of high cube warehouse uses; or
- 4.106 million square feet of mixed industrial development (3.626 million square feet of high cube warehouse and 480 thousand square feet of light industrial); or
- 910 single family homes; or
- 246,000 square feet of retail uses ; or
- Some combination of industrial, office, retail, and residential development that does not generate more than 919 PM peak hour trips.

Appendix G also notes that the primary bottleneck at the Austin Road/SR 99 interchange is related to the two-lane at-grade crossing of Austin Road at the Union Pacific Railroad tracks. This narrow crossing leads to constrained intersection operations at Austin Road/Moffat Boulevard with inefficient split-phase signal operations. The findings in Appendix G indicate that if the crossing were widened to five lanes (two southbound lanes and three northbound lanes), up to 16.6 percent of the project's PM peak hour trip generation (1,444 PM peak hour trips) could be accommodated without degrading the operations at the Austin Road/SR 99 interchange.

While the widened at-grade crossings would allow additional development of the ARBPRC site, widening of the crossing would require approval from the California Public Utilities commission, which is generally reluctant to widen at-grade crossings.

The following text describes the project-specific impacts and mitigation measures. While extensive mitigation is identified in this section, it is important to note that there is no "concurrency" requirement in CEQA. In other words, mitigation measures need only be implemented within a reasonable time frame from when the impact occurs. Because of the long time frame over which this project is expected to build out, not all of the existing plus project transportation impacts identified in this report will occur on opening day. The City would need to monitor the transportation system and determine when the mitigations described in this section are required. Additionally, while some impacts remain significant and unavoidable even when mitigation is implemented, this

4 The development programs are examples that generate approximately 919 PM peak hour trips. There are many other combinations of land use that could be proposed. Neither the City nor this EIR are prescribing one of the land use programs listed above.

finding does not imply that the mitigation measure is infeasible. CEQA requires that any feasible mitigation measure be implemented to reduce the environmental impact of the project.

Table 5.9-10 summarizes the intersection LOS with mitigation under the full buildout conditions, and with mitigation in place that limits development to that which can be accommodated by the street system with the above improvements, but prior to construction of a new interchange. Figure 5.9-7 shows the new trip distribution pattern under full buildout with mitigation. Figure 5.9-8 shows the AM and PM peak hour traffic volumes and recommended lane configurations under full buildout with mitigation. Figure 5.9-9 summarizes the AM and PM peak hour turning movement volumes and recommended lane configurations with the development threshold and the interim improvements at Austin Road/SR 99. Figure 5.9-10 compares the different roadway and intersection configurations at the existing and relocated Austin Road/SR 99 interchange under the full buildout scenario and the scenario with the development threshold in place. The table and figures are presented at the end of this section. Appendix G also contains the detailed intersection LOS calculations for the existing plus project with mitigation scenario.

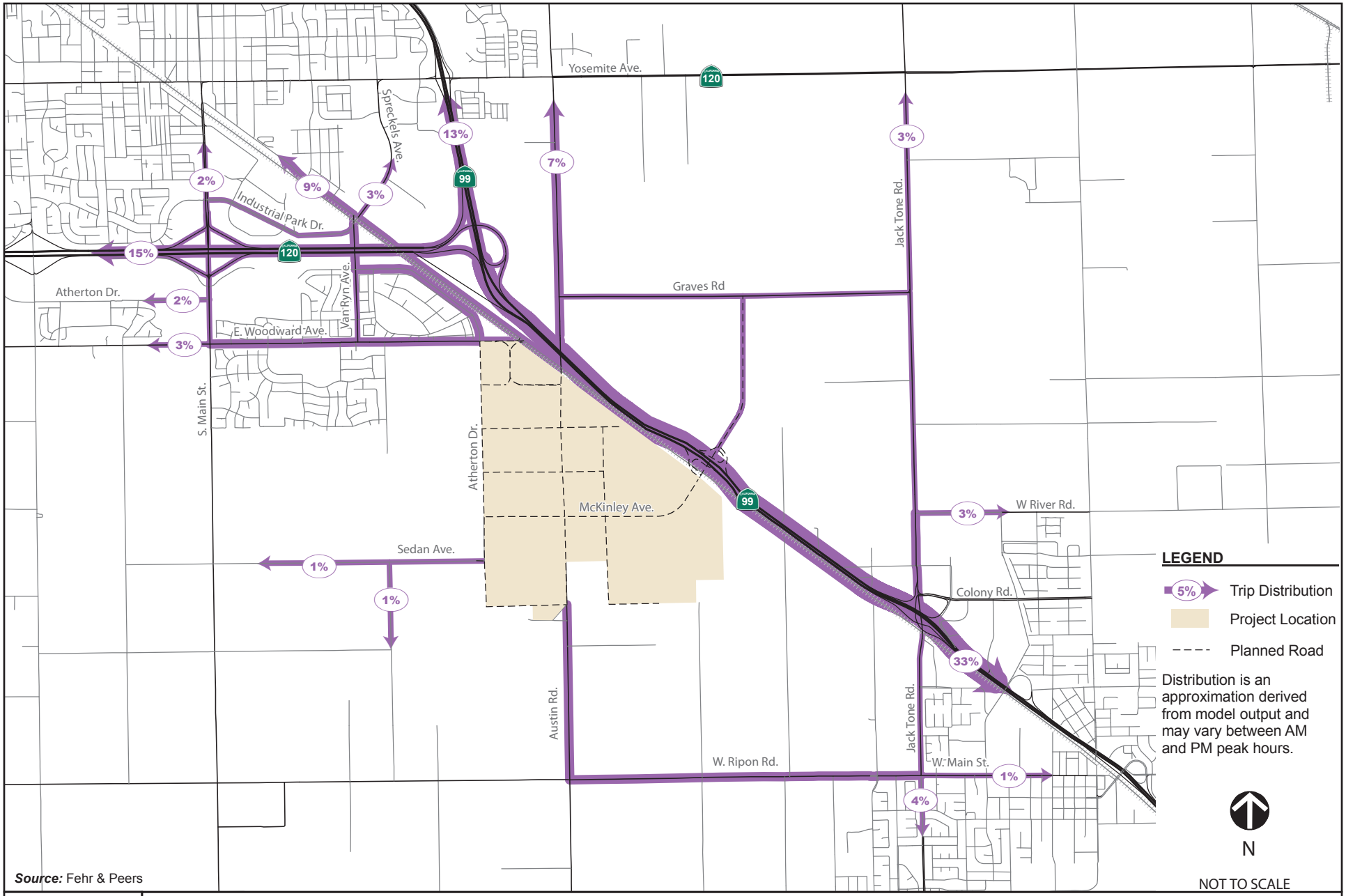
TABLE 5.9-10

INTERSECTION LEVEL OF SERVICE – EXISTING PLUS PROJECT WITH MITIGATION

Intersection[1]	Peak Hour	Existing Plus Project Conditions		Full Buildout with Mitigation		Partial Buildout with Mitigation	
		Delay	LOS	Delay	LOS	Delay	LOS
2. Main St./SR 120 Eastbound Ramps	AM	20	C	22	C	27	C
	PM	**87**	**F**	55	D	37	D
3. Main St./Atherton Dr.	AM	11	B	11	B	9	A
	PM	**92**	**F**	23	C	11	B
4. Main St./Woodward Ave.	AM	15	C	19	B	12	B
	PM	**102**	**F**	25	C	15	B
5. Van Ryn Ave./Industrial Park Dr.	AM	16	C	14	B[4]	12	B
	PM	**65**	**F**	29	D[4]	18	C
8. Woodward Ave./Atherton Dr.	AM	**>150**[2]	**F**	23	C	10	B
	PM	**>150**	**F**	18	B	11	B
9. Woodward Ave./Moffat Blvd.	AM	**>150**	**F**	14	B	10	B
	PM	**>150**	**F**	18	B	13	B
10. Moffat Blvd./SR 99 Southbound Off-Ramp	AM	**>150**	**F**	N/A	N/A[3]	21	C
	PM	**>150**	**F**			39	D
12. Austin Rd./SR 99 Northbound Ramps	AM	**>150**	**F**	N/A	N/A[3]	29	C
	PM	**>150**	**F**			34	C
13. Moffat Blvd./Austin Rd.	AM	**147**	**F**	11	B	12	B
	PM	**122**	**F**	30	D	26	D
25. Austin Rd./Ripon Rd.	AM	**103**	**F**	9	A[4]	9	A
	PM	**>150**	**F**	14	B[4]	10	A
27. Woodward Ave. Extension/Woodward Ave.	AM	N/A	N/A	21	C	N/A	N/A
	PM			16	B		
28. Woodward Ave. Extension/Austin Rd.	AM	N/A	N/A	11	B	N/A	N/A
	PM			19	B		

Notes:
Bold type indicates unacceptable operations.
1. See Tables 5.9-8 and Appendix G for the traffic control at each intersection for the different analysis scenarios.
2. Delay at these locations is outside the range of the software. See Appendix G for intersection LOS calculation sheets.
3. Intersection no longer exists under this scenario.
4. This LOS analysis assumes implementation of Mitigation Measure 5.9-6a.

Source: Fehr & Peers, 2009.



Source: Fehr & Peers

FIGURE 5.9-7

Project Trip Distribution - Existing Plus Project Full Buildout Conditions with Mitigation

Project-Specific Impacts and Mitigations

5.9-1 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the four intersections around the Austin Road/SR 99 interchange.

As shown in Table 5.9-8, implementation of the ARBPRC project would degrade the operations of the following four unsignalized study intersection to an unacceptable LOS:

- Woodward Avenue/Moffat Boulevard
- Moffat Boulevard/SR 99 Southbound Off-Ramp
- Austin Road/SR 99 Northbound Ramps
- Moffat Boulevard/Austin Road/SR 99 Southbound On-Ramps

In addition, all four intersections would meet the AM and/or PM peak hour signal warrants with implementation of the project. This is a ***significant impact***.

Mitigation Measure

As discussed above, it is infeasible for the ARBPRC project to fully fund the relocation of the Austin Road interchange and mitigate full project impacts under existing plus full project buildout conditions. However, a portion of the project site (development that generates up to 919 PM peak hour trips[5]) could be developed prior to relocation of the interchange, if minor ramp and intersection improvements are implemented to ensure adequate capacity to accommodate this level of partial development. Consequently, the mitigation strategy below requires the project developer to construct these ramp and intersection improvements and limits development on the project site to the level that can be accommodated by this mitigated roadway system until such time that the interchange is constructed. The mitigation strategy further requires establishment of an interchange fee program, which would apply to this proposed project and other future development projects in the area, to fund the relocation of the Austin Road/SR 99 interchange. The interchange would be constructed at some point in the future with Caltrans as the Lead Agency under CEQA.

5.9-1 a) *The project applicant and the City of Manteca shall work with Caltrans to obtain the necessary permits to construct the improvements described below.*

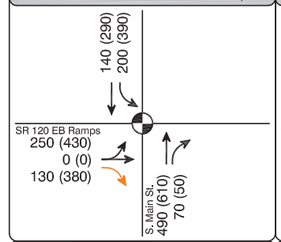
b) *The project applicant shall construct or fund the following roadway improvements:*

Woodward Avenue/Moffat Boulevard

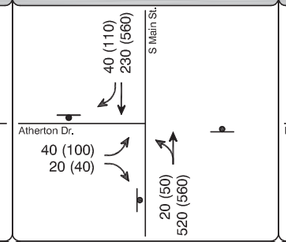
- *Construct a southbound right turn lane.*
- *Widen Moffat Boulevard south of the Woodward Avenue intersection to include two lanes in each direction.*

5 Assuming the California Public Utilities Commission allows widening of the Austin Road/Union Pacific Railroad crossing, up to 1,444 PM peak hour trips could be accommodated.

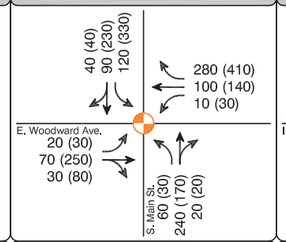
2. S. Main St./SR 120 EB Ramps



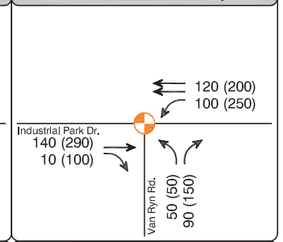
3. S. Main St./Atherton Dr.



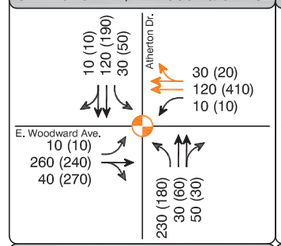
4. S. Main St./E Woodward Ave.



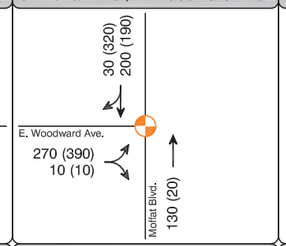
5. Industrial Park Dr./Van Ryn Rd.



8. Atherton Dr./E. Woodward Ave.



9. Moffat Blvd./E. Woodward Ave.



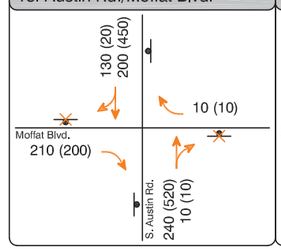
10. SR 99 SB Off-Ramp/Moffat Blvd.

Intersection does not exist under this scenario.

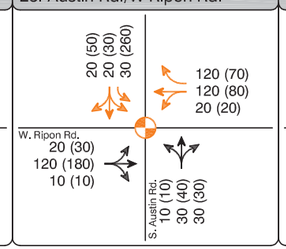
12. Austin Rd./SR 99 NB Ramps

Intersection does not exist under this scenario.

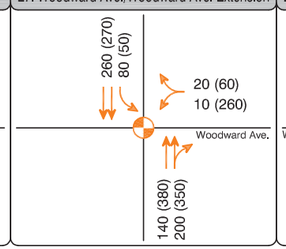
13. Austin Rd./Moffat Blvd.



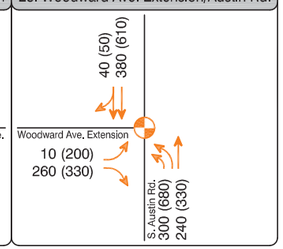
25. Austin Rd./W Ripon Rd.



27. Woodward Ave./Woodward Ave. Extension



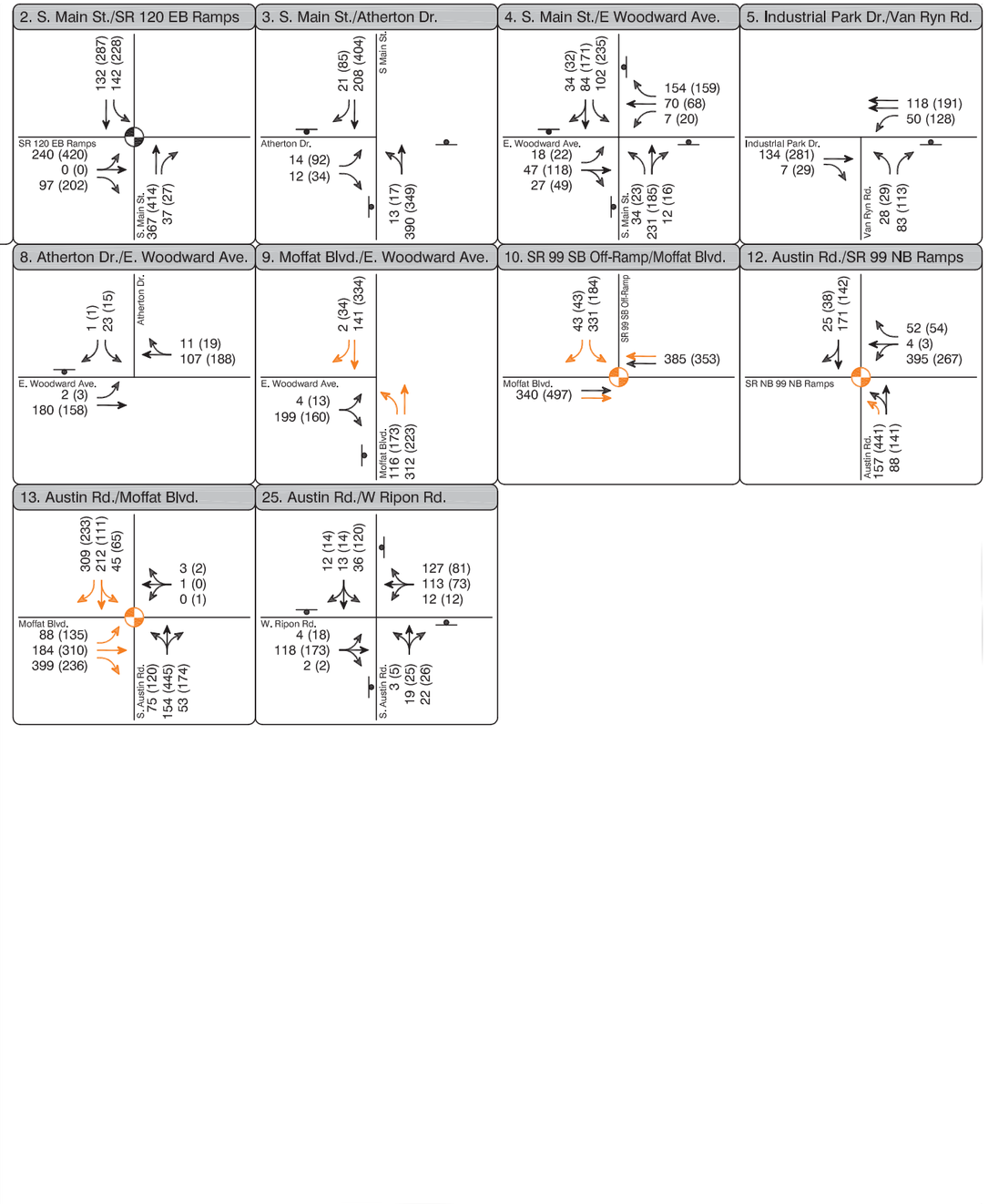
28. Woodward Ave. Extension/Austin Rd.



Source: Fehr & Peers

FIGURE 5.9-8

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project with Mitigation

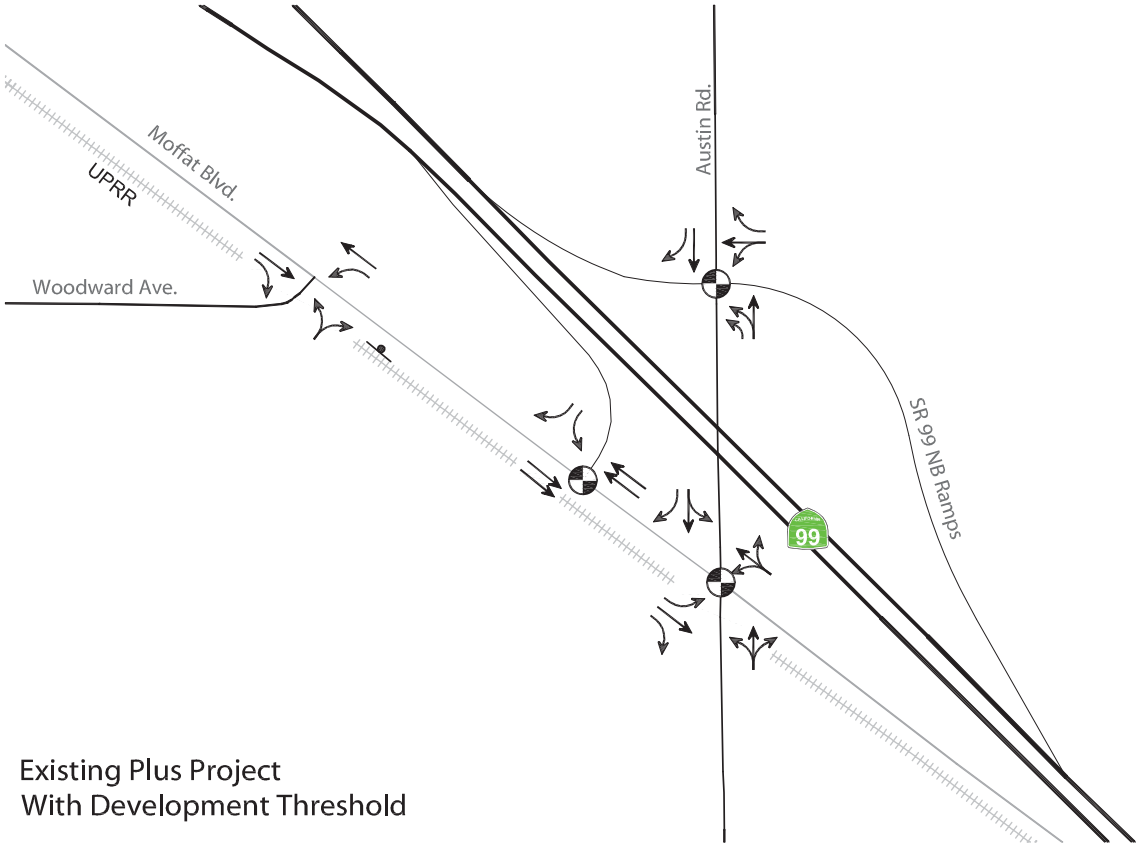


Source: Fehr & Peers

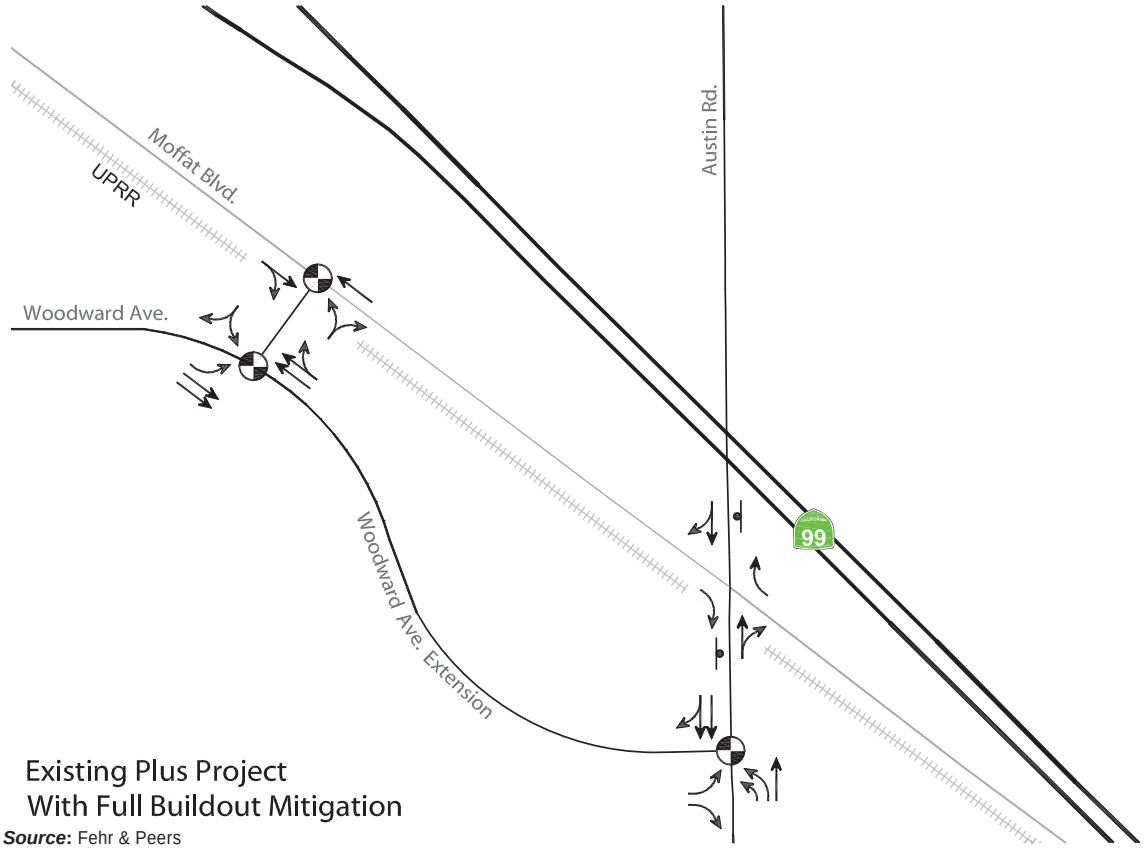
PBS&J

FIGURE 5.9-9

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project with Development Threshold



Existing Plus Project
With Development Threshold



Existing Plus Project
With Full Buildout Mitigation

LEGEND

Traffic Signal

Stop Sign

N

NOT TO SCALE

***Source*:** Fehr & Peers

PBS&J

FIGURE **5.9-10**

Austin Road/SR 99 Mitigation Comparison - Existing Plus Project

0D5141300

Austin Road Business Park and Residential Community

- *The second northbound lane shall be trapped into the left-turn lane to westbound Woodward Avenue*

Moffat Boulevard/SR 99 Southbound Off-Ramp

- *Install a traffic signal.*
- *Widen the off-ramp as far as feasible to construct separate left and right-turn lanes at the off-ramp approach to the intersection.*
- *Widen the approaches and departures on Moffat Boulevard to include two lanes in each direction.*

Austin Road/SR 99 Northbound Ramps

- *Install a traffic signal.*
- *Widen the northbound Austin Road approach to accommodate a left-turn lane and shared left-through lane at the intersection.*

Austin Road/Moffat Boulevard

- *Install a traffic signal that is pre-empted by the crossing protection devices at the adjacent Union Pacific Railroad crossing arms.*
- *Widen the southbound approach to include a shared left-through lane and a separate right-turn lane.*
- *Widen south-eastbound Moffat Boulevard approach to include separate left-turn, through, and right-turn lanes.*
- *Widen the north-westbound departure on Moffat Boulevard to include two lanes.*

c) *The City of Manteca shall work with Caltrans, SJCOG, and the City of Ripon to develop a sub-regional impact fee program to generate funds to relocate the Austin Road/SR 99 interchange. The project applicant shall pay the appropriate Austin Road interchange fee to assist in the implementation of the new interchange. The project applicant and the City shall also work to implement an extension of Woodward Avenue to Austin Road by doing the following:*

- *The project applicant shall dedicate sufficient right of way to allow for the realignment of Woodward Avenue to intersect with Austin Road south of the Union Pacific Railroad crossing.*
- *The City of Manteca shall update the PFIP to include the realignment of Woodward Avenue, a new intersection with a traffic signal at Woodward Avenue Extension/Austin Road, a new intersection with a traffic signal at Woodward Avenue/Woodward Avenue Extension, and a new intersection with a traffic signal at Woodward Avenue/Moffat Boulevard These final two signals shall be pre-empted by the crossing control devices at the adjacent Union Pacific Railroad crossing.*
- *The project applicant shall pay the full PFIP fee at time of building permit approval.*

- *In conjunction with the opening of the Woodward Avenue extension, the project applicant shall pay for or implement the construction of barriers to restrict access from Moffat Boulevard to Austin Road to right-in/right-out movements only. Alternatively, Moffat Boulevard could be closed to traffic immediately south of the existing Woodward Avenue intersection and be converted into a cul-de-sac.*

d) *The City shall only approve building permits to a point where the ARBPRC project generates up to 919[6] PM peak hour trips. A traffic study shall be required for any potential development to confirm the PM peak hour trip generation of the proposed and approved development in the ARBPRC. Any building permit approvals beyond this level can only be approved upon the completion of the relocated Austin Road/SR 99 interchange or the completion of a supplemental traffic analysis, which determines that the mitigation measures listed above are no longer necessary or identifies equally effective mitigation.*

As discussed above, the construction of the interchange is not within the jurisdiction of the City of Manteca and Caltrans permits are required for both the interim improvements and the long-term relocation of the interchange. Although the above mitigation includes development of a fee-based mitigation program, there is no assurance that the improvements to be funded will actually be constructed since Caltrans, the Lead Agency for construction of the interchange, has not completed the PSR for the relocated Austin Road/SR 99 interchange. Thus, fees contributed by the proposed project cannot assure construction of the interchange. Consequently, the impact of the proposed project would remain ***significant and unavoidable***.

5.9-2 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels at the Main Street/Eastbound SR 120 Ramps signalized intersection.

As shown in Table 5.9-8, implementation of the ARBPRC project would degrade the operations of the Main Street/Eastbound SR 120 Ramps intersection from an acceptable LOS C to an unacceptable LOS F during the PM peak hour. This is a ***significant impact***.

Mitigation Measure

This impact could be mitigated with the following:

5.9-2 *The project applicant shall pay for/implement the following intersection improvements at the Main Street/Eastbound SR 120 Ramps intersection:*

- *Lengthen the eastbound right turn lane to 600 feet and the northbound right turn to 500 feet; and*
- *Re-time the traffic signal.*

6 Up to 1,444 PM peak hour trips could be accommodated if the California Public Utilities Commission allowed the widening of Austin Road to five lanes across the Union Pacific Railroad Tracks.

There is adequate right of way for this mitigation measure and its implementation would provide acceptable LOS D operations at the intersection. Moreover, the City has a demonstrated history of working with Caltrans to construct similar improvements, such as recently added turn lanes at the SR 120/Union Road interchange. Therefore, this impact is considered ***less than significant*** with mitigation.

5.9-3 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Main Street/Atherton Drive intersection.

As shown in Table 5.9-8, implementation of the ARBPRC project would degrade the operations of this unsignalized study intersection to an unacceptable LOS. In addition, this signal meets the AM and/or PM peak hour signal warrants with implementation of the project. This is a ***significant impact***.

Mitigation Measure

This impact could be mitigated with the following:

5.9-3 *Implement Mitigation Measure 5.9-2.*

Mitigation Measure 5.9-2 would add additional lanes to the SR 120 EB Ramps/Main Street intersection. The additional capacity would eliminate vehicle spillbacks into the Main Street/Atherton Drive intersection, thereby restoring operations to an acceptable LOS D level. Furthermore, the City intends to construct a traffic signal at the Main Street/Atherton Drive intersection in late 2010 in conjunction with the Atherton Drive extension project. Therefore, this impact is considered ***less than significant*** with mitigation.

5.9-4 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Main Street/Woodward Avenue intersection.

As shown in Table 5.9-8, implementation of the ARBPRC project would degrade the operations of this unsignalized study intersection to an unacceptable LOS. In addition, this intersection would meet the AM and/or PM peak hour signal warrants with implementation of the project. This is a ***significant impact***.

Mitigation Measure

This impact could be mitigated with the following:

5.9-4 a) *The City shall update the PFIP project list to include new traffic signal at the Main Street/Woodward Avenue intersection. The City must also ensure that the intersection improvement is constructed at such a time that a traffic analysis determines that the improvements are warranted.*

b) *The project applicant shall pay the full PFIP fee for local roadway improvements at the time building permits are issued.*

or

c) *The City could establish a fair-share payment program in Southern Manteca and require the project applicant to either construct the traffic signal or pay a fair-share payment to be calculated at time the signal is required (assuming that the City or another party constructs the traffic signal).*

Implementation of this mitigation measure would provide acceptable LOS C operations at the intersection. Therefore this impact is considered ***less than significant*** with mitigation.

5.9-5 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Van Ryn Avenue/Industrial Park Drive intersection.

As shown in Table 5.9-8, implementation of the ARBPRC project would degrade the operations of this unsignalized study intersection to an unacceptable LOS. In addition, this intersection would meet the AM and/or PM peak hour signal warrants with implementation of the project. This is a ***significant impact***.

Mitigation Measure

This impact could be mitigated if the interchange at Austin Road/SR 99 was relocated to the south. This new interchange would attract enough traffic away from this intersection such that that no additional intersection improvements would be necessary. Since relocating the interchange is infeasible, it is recommended that the following mitigation measure be implemented:

5.9-5 a) *The City shall update the PFIP project list to include a new traffic signal or roundabout at the Van Ryn Avenue/Industrial Park Drive intersection. The City must also ensure that the intersection improvement is constructed at such a time that a traffic analysis determines that the improvements are warranted.*

b) *The project applicant shall pay the full PFIP fee for local roadway improvements at the time building permits are approved.*

or

c) *The City could establish a fair-share payment program in Southern Manteca and require the project applicant to either construct the traffic signal or pay a fair-share payment to be calculated at time the signal is required (assuming that the City or another party constructs the traffic signal).*

Implementation of this mitigation measure will provide acceptable LOS D operations at the intersection and this impact is considered ***less than significant*** with mitigation.

5.9-6 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Woodward Avenue/Atherton Drive intersection.

As shown in Table 5.9-8, implementation of the ARBPRC project would degrade the operations of this unsignalized study intersection to an unacceptable LOS. In addition, this intersection would meet the AM and/or PM peak hour signal warrants with implementation of the project. This is a ***significant impact***.

Mitigation Measure

This impact could be mitigated with the following:

5.9-6 a) *The City shall update the PFIP project list to include a new traffic signal at the Woodward Avenue/Atherton Drive intersection. The City must also ensure that the intersection improvement is constructed at such a time that a traffic analysis determines that the improvements are warranted.*

b) *The project applicant shall pay the full PFIP fee for local roadway improvements at the time building permits are approved.*

or

c) *The City could establish a fair-share payment program in Southern Manteca and require the project applicant to either construct the traffic signal or pay a fair-share payment to be calculated at time the signal is required (assuming that the City or another party constructs the traffic signal).*

Implementation of this mitigation measure would provide acceptable LOS C operations at the intersection. Therefore, under full project buildout, this impact is considered ***less than significant*** with mitigation.

5.9-7 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Austin Road/Ripon Road intersection.

As shown in Table 5.9-8, implementation of the ARBPRC project would degrade the operations of this unsignalized study intersection to an unacceptable LOS. In addition, this intersection would meet the AM and/or PM peak hour signal warrants with implementation of the project. This is a ***significant impact***.

Mitigation Measure

This impact could be mitigated if the interchange at Austin Road/SR 99 was relocated to the south. This new interchange would attract enough traffic away from this intersection such that that no

additional intersection improvements would be necessary. Since relocating the interchange is infeasible, it is recommended that the following mitigation measure be implemented:

5.9-7 *The City of Manteca shall work with the City of Ripon and San Joaquin County to develop a fair-share funding program for improvements at this intersection. Based on this fair-share program, the project applicant shall pay its fair-share for the following improvements at the Austin Road/Ripon Road intersection:*

- *Install a traffic signal.*
- *Widen the north leg of the intersection to two lanes in each direction for at least 600 feet.*
- *Widen the east leg of the intersection to two lanes in each direction for at least 600 feet.*
- *Provide a channelized westbound right turn lane at the intersection.*
- *Provide a left-turn lane, and a shared left, through, right-turn lane on the southbound approach.*

In order to implement the improvement, the project applicant may be required to construct the improvements above, but will be provided with a right of reimbursement from third parties who benefit from the intersection improvements.

Implementation of the mitigation measure above would require cooperation with San Joaquin County and the City of Ripon and would involve improvements in unincorporated San Joaquin County that are outside the control of the City or applicant. Since this mitigation measure cannot be guaranteed, this impact is ***significant and unavoidable***.

5.9-8 The proposed project would cause an increase in traffic which would degrade or exacerbate unacceptable LOS on 13 freeway mainline segments near the project.

As shown in Table 5.9-9, implementation of the ARBPRC project would degrade or exacerbate unacceptable LOS on 13 of the 16 freeway mainline study facilities. The degraded operations would result in either an unacceptable LOS or would exacerbate an unacceptable LOS on the freeway mainline segment. This is a ***significant impact***.

Mitigation Measure

The project's impacts could be reduced by widening the SR 99 and SR 120 mainline by an extra lane. However, this improvement is infeasible because of lack of funding and the time required to implement these improvements. Therefore this impact is considered ***significant and unavoidable***.

5.9-8 *The project applicant shall pay the San Joaquin County Regional Transportation Impact Fee prior to the approval of building permits.*

Note that the only regional freeway project that is expected to be completed in the near future is the widening of SR 99 to six lanes north of SR 120. This project would add capacity to this section of SR 99 and reduce the project-related traffic impact to a less than significant level on the four affected segments. However, the planned SR 120 widening project (which would also reduce the existing

plus project impact to a less than significant level) is not expected to be completed in the near future. There are no plans to widen SR 99 south of SR 120.

5.9-9 The proposed project would cause an increase in traffic which would degrade or exacerbate unacceptable operations at freeway merge, diverge, and weaving areas near the project.

As described earlier, ramp merge, ramp diverge, and weaving analyses were not conducted as part of this EIR because poor mainline operations translates into poor ramp area operations. With deficient mainline operations identified under existing plus project conditions, it is redundant to evaluate ramp merge, ramp diverge, and weaving area operations. Therefore, based on the results of the freeway mainline analysis, the project is expected to degrade ramp merge, ramp diverge, and weaving area operations at all locations were mainline operations were identified as deficient above. This is a ***significant impact***.

Mitigation Measure

Poor ramp merge, ramp diverge, and weaving area operations that are caused by oversaturated conditions on the mainline cannot be addressed without additional mainline capacity (or reduced demand for travel). As described in Mitigation Measure 5.9-8 it is required that the project applicant pay the San Joaquin County Regional Transportation Impact Fee. While this revenue source will help fund regional freeway improvements, there is no guarantee that the ARBPRC-generated funds will go toward improvements to reduce the significance of the project-related impacts. Therefore this impact is considered ***significant and unavoidable***.

5.9-9 *The project applicant shall pay the San Joaquin County Regional Transportation Impact Fee as building permits are approved.*

5.9-10 The proposed project would generate new pedestrian travel within the site.

The project residences and businesses would create new pedestrian travel as residents and employees exercise, walk to neighboring uses, or recreate. As described earlier, it is assumed that as more specific plans for the project are created, sidewalks will be included on all public streets per City standards. However, the layout of the project could lead to circuitous pedestrian circulation through the development of long cul-de-sacs or by separating compatible residential and non-residential uses with walls, drainage facilities or other impediments to walking. This is a ***potentially significant impact***.

Mitigation Measure

This impact could be mitigated through implementation of Mitigation Measure 5.9-10. This impact is ***less than significant with mitigation***.

5.9-10 *The City shall review the pedestrian circulation of the ARBPRC as more detailed plans are developed. The City shall require the developer to address any design features that would*

lead to overly circuitous pedestrian circulation or other issues that discourage pedestrian travel.

5.9-11 The proposed project would generate new bicycle travel within the site.

The project residences and businesses would create new bicycle travel as residents and employees exercise, travel to neighboring uses, or recreate. As described earlier, the City Bicycle Master Plan shows several proposed facilities within the project site. Since the project description and site plan do not show any bicycle facilities, this is considered a ***potentially significant impact***.

Mitigation Measure

This impact could be mitigated through implementation of Mitigation Measure 5.9-11. This impact is ***less than significant with mitigation***.

5.9-11 *The City shall review the bicycle circulation of the ARBPRC as more detailed plans are developed. The City shall require the developer to include bicycle facilities that are required by the City's Bicycle Master Plan, or City code. The City shall make recommendations for other improvements that could enhance the bicycle environment of the ARBPRC area.*

5.9-12 The proposed project may create an ultimate need for transit service to the site.

Even though there is no transit service near the project site, nor is any service planned, the project residences and businesses may create an ultimate demand for transit service. The current version of the site plan is too generic to determine if any provisions for future transit (e.g., bus turnouts, bus shelters, etc) have been made. Since the project description and site plan do not show any transit accommodations, this is considered a ***potentially significant impact***.

Mitigation Measure

This impact could be mitigated through implementation of Mitigation Measure 5.9-12. This impact is ***less than significant with mitigation***.

5.9-12 *The City shall review the ARBPRC site plan to ensure that potential future transit is adequately accommodated within the site. The City shall make recommendations for transit facilities so that future service is not precluded in the area.*

5.9-13 The proposed project would generate new travel across at-grade railroad crossings.

The project would generate new vehicle traffic across the at-grade railroad crossings at Austin Road and Woodward Avenue Based on the analysis in the Existing Setting section, there have been very few collisions or incidents at these crossings over the last 20 years, and none of the collisions were determined to be caused by equipment malfunctions or deficiencies with the crossing. Moreover, data from the Federal Railroad Administration indicates that the warning devices presently in place at the two at-grade railroad crossings are associated with lower levels of collision rates when

considering the entire range of potential warning devices. Therefore, the project would not add traffic to an at-grade railroad crossing that has a demonstrated record of an above-average collision history and the impact is considered ***less than significant***.

Mitigation Measure

None required.

5.9-14 The proposed project would generate traffic on new internal project roadways.

The project residences and businesses would generate traffic on new internal project roadways. Given the generic nature of the site plan, it is unclear if the internal project roadways would accommodate project-related traffic at an acceptable LOS; this is considered a ***potentially significant impact***.

Mitigation Measure

To adequately serve internal project traffic, Mitigation Measure 5.9-14 shall be implemented. Implementing this mitigation measure would ensure that traffic on internal roadways meets the City's LOS standards. This impact is ***less than significant with mitigation***.

5.9-14 *The project applicant shall construct the internal project roadways with the lane widths shown in Figure 5.9-11.*

CUMULATIVE NO PROJECT ANALYSIS

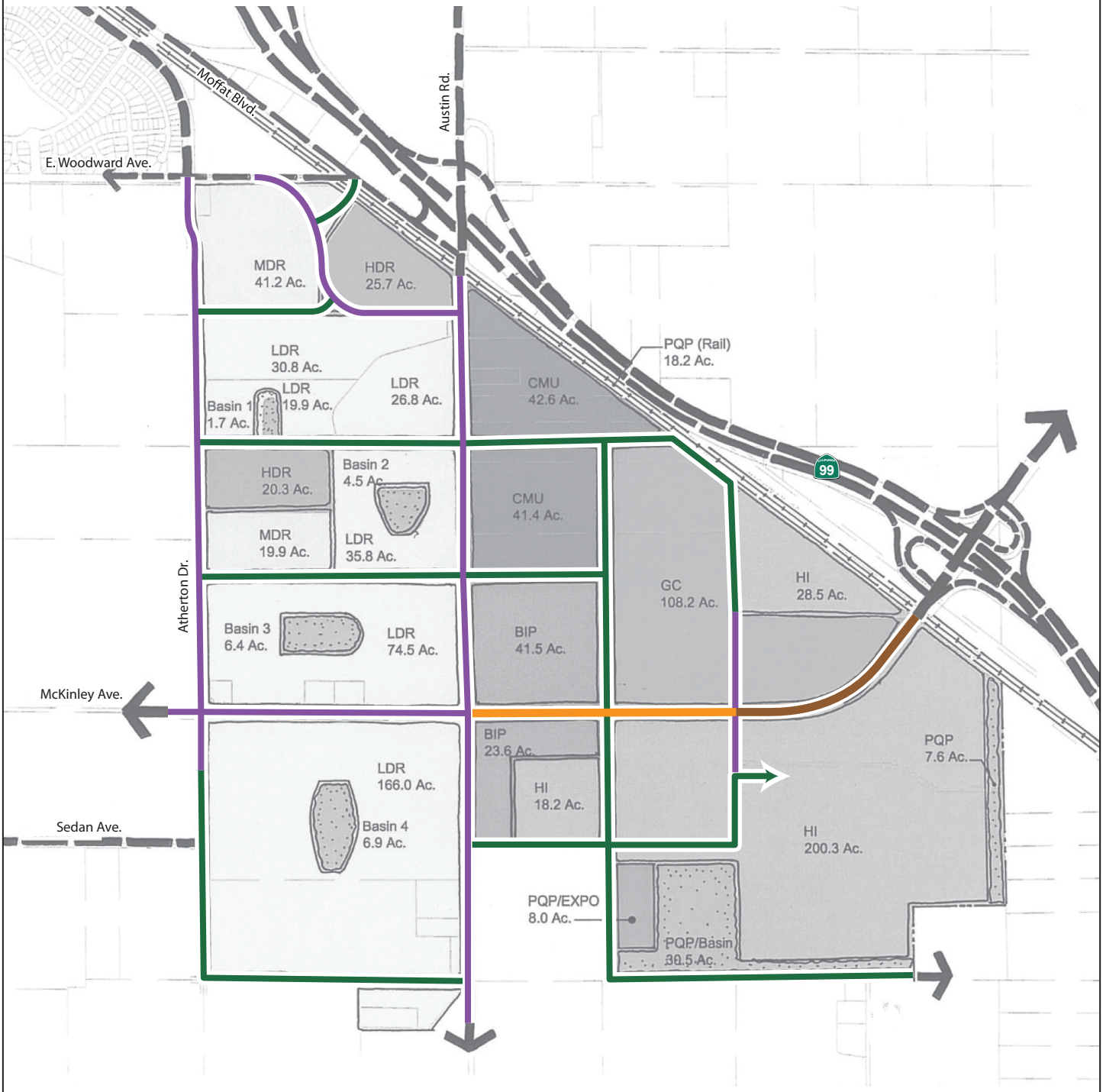
This section describes the transportation system near the proposed ARBPRC project site under cumulative conditions without the proposed project. Cumulative conditions are defined as 2025 since this is the approximate time horizon of the current City of Manteca General Plan. In addition, 2025 is with the cumulative year for other analyses recently completed in the area.

Transportation System Improvements

This section describes the improvements to the transportation system (roadways, bicycle, pedestrian, and transit) assumed under cumulative conditions.

Roadways

The City of Manteca General Plan has identified a set of roadway improvements that correspond to buildout of the Land Use Element. However, as described in the Regulatory Setting, the current PFIP fee covers only a portion of the total cost of implementing these improvements. Therefore, adequate funding is not being collected to fully construct all the improvements included in the General Plan. Since full funding for future roadway improvements has not been identified and it is unknown when the ultimate improvements would be constructed, these projects were not assumed under cumulative conditions.



Note: McKinley Ave. interchange shown in this figure is not part of the proposed project. The funding and timing of this improvement are uncertain.

LEGEND

- 2 Lanes - With Turn Lanes at Key Intersections and Driveways
- 4 Lanes - With Median and Turn Lanes
- 6 Lanes - With Median and Turn Lanes
- 7 Lanes (4 EB Lanes) - With Median and Turn Lanes

N

NOT TO SCALE

***Source*:** Fehr & Peers

FIGURE **5.9-11**

Internal Roadway System

While the PFIP is not assumed to be fully funded, several local roadway projects with alternate funding sources are assumed to be complete under cumulative conditions:

- Extension of Atherton Drive between Main Street and Van Ryn Avenue
- Extension of Atherton Drive between Union Road and Airport Way
- Intersection signalization and expansion at Main Street/Atherton Drive

In addition to local roadway improvements, SJCOG has included the following projects in the Tier 1 funded list in the 2007 RTP:

- Widening of SR 120 from four to six lanes between I-5 and SR 99.
- Widening of SR 99 from four to six lanes between SR 4 and SR 120.
- Widening of Yosemite Avenue (SR 120) from two to four lanes between Austin Road and N. Ripon Road
- Widening of I-5 by one lane in each direction between I-205 and French Camp Road

These improvements will be funded through a combination of regional transportation impact fees and the Measure K sales tax revenues.

The City of Manteca, in cooperation with Caltrans District 10 and SJCOG, has initiated a PSR for a new Austin Road/SR 99 interchange. The PSR will determine the required interchange design to serve full buildout of the City of Manteca General Plan at an adequate LOS D or better. Additionally, the interchange design may also include ramp meters, auxiliary lanes and other improvements to reduce the impact on the SR 99 mainline. While planning for this interchange has begun, it was not assumed to be constructed under cumulative conditions because funding for the project has not been secured.

Pedestrian, Bicycle and Transit Improvements

In general, pedestrian and bicycle improvements are added as part of new development in Manteca. Since there are no definitive plans for new development immediately around the project site, no new pedestrian or bicycle improvements are anticipated under Cumulative Conditions. However, development is expected to occur along Atherton Drive and along Main Street north of Woodward Avenue. In these locations, new sidewalks, and bike lanes/paths are expected.

The SJCOG 2007 RTP notes that between 2007 and 2019, transit funding will allow for the "incremental development" of fixed route transit service in Manteca, Lodi, and Tracy. However, no details are given about which routes would change or where new routes would be located. Based on the limited funding available for transit, no new service is anticipated near the project area under cumulative conditions.

Traffic Estimates

Cumulative no project conditions traffic volume estimates are based on the results from a modified version of the 2025 SJCOG TDF model. Using information from the City of Manteca Community Development Department, the 2025 SJCOG land use data were updated to reflect more realistic future development in the City of Manteca. Some of the significant developments near the proposed ARBPRC include: Evans Estates, Pillsbury Estates, Tesoro Apartments, The Promenade Shops, and Union Crossing. For areas outside of Manteca, the default 2025 land use forecasts from SJCOG were assumed. In addition, the transportation improvements described above were included in the 2025 version of the model.

To reduce the amount of model error in the cumulative conditions forecasts, the difference method was applied using the formula below:

> Cumulative No Project Turning Movement Volumes = Existing Turning Movement Volumes + (2025 SJCOG Turning Movement Volumes – 2008 SJCOG Turning Movement Volumes)

The traffic forecasts derived from the difference method were analyzed using the traffic operations analysis methodologies described in the previous section.

Freeway mainline forecasts were developed for SR 99 and SR 120 by taking the existing conditions ADT volumes and increasing them based on the growth rates shown in the recently completed study for the SR 99 widening project between SR 4 and SR 120. I-5 volumes were increased based on the growth rates shown in the recently completed study for interchange improvements at Louise Avenue/I-5. Using data from previous Caltrans studies was chosen over using direct model data, since the SJCOG model tends to underestimate freeway mainline growth in Southern San Joaquin County when the forecasts are adjusted with the difference method.

Intersection Operations

Figures 5.9-12a and 5.9-12b present the AM and PM peak hour turning movement volumes and intersection lane configurations for cumulative no project conditions. Intersection operations were analyzed using the same software and methodology discussed in the existing conditions analysis section.

Table 5.9-11 summarizes the results of the cumulative conditions intersection LOS analysis. Detailed intersection LOS calculation sheets are presented in Appendix G.

As shown in Table 5.9-11, the increase in background traffic associated with new growth, combined with relatively sparse investment in new roadway infrastructure leads to unacceptable intersection operations at the following locations:

- Main Street/SR 120 Westbound Ramps
- Main Street/SR 120 Eastbound Ramps
- Main Street/Atherton Drive

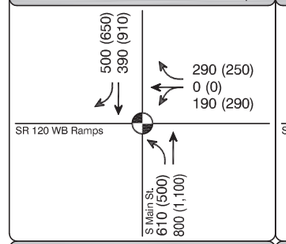
TABLE 5.9-11

INTERSECTION LEVEL OF SERVICE – CUMULATIVE NO PROJECT CONDITIONS

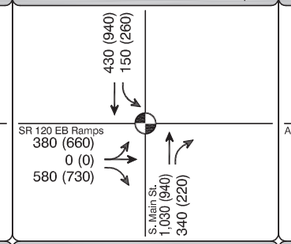
Intersection	Control	Peak Hour	Cumulative Conditions	
			Delay	LOS
1. Main St./SR 120 Westbound Ramps	Signal	AM PM	45 **>150**[1]	D **F**
2. Main St./SR 120 Eastbound Ramps	Signal	AM PM	**70** **132**	**E** **F**
3. Main St./Atherton Dr.	Signal	AM PM	**88** **129**	**F** **F**
4. Main St./Woodward Ave.	All-way Stop-Controlled	AM PM	**137** **>150**	**F** **F**
5. Van Ryn Ave./Industrial Park Dr.	Side-Street Stop-Controlled	AM PM	18 **>150**	C **F**
6. Van Ryn Ave./Woodward Ave.	Side-Street Stop-Controlled	AM PM	29 27	D D
7. Woodward Ave./Pillsbury Rd.	Side-Street Stop-Controlled	AM PM	16 16	C C
8. Woodward Ave./Atherton Dr.	Side-Street Stop-Controlled	AM PM	16 30	C D
9. Woodward Ave./Moffat Blvd.	Side-Street Stop-Controlled	AM PM	**>150** **>150**	**F** **F**
10. Moffat Blvd./SR 99 Southbound Off-Ramp	Side-Street Stop-Controlled	AM PM	**>150** **>150**	**F** **F**
11. Austin Rd./Graves Rd.	Side-Street Stop-Controlled	AM PM	12 12	B B
12. Austin Rd./SR 99 Northbound Ramps	All-way Stop-Controlled	AM PM	24 **70**	C **F**
13. Moffat Blvd./Austin Rd./SR 99 Southbound On-Ramps	All-way Stop-Controlled	AM PM	**47** **59**	**E** **F**
14. Austin Rd./Yosemite Ave.	Signal	AM PM	29 31	C C
15. Jack Tone Rd./Yosemite Ave.	Signal	AM PM	20 26	B C
16. Jack Tone Rd./Graves Rd.	Side-Street Stop-Controlled	AM PM	11 14	B B
17. Sedan Ave./Main St.	Side-Street Stop-Controlled	AM PM	11 12	B B
18. Sedan Ave./Austin Rd.	Side-Street Stop-Controlled	AM PM	12 12	B B
19. Jack Tone Rd./W. River Rd.	Side-Street Stop-Controlled	AM PM	15 28	B D
20. Jack Tone Rd./Santos Ave.	Signal	AM PM	19 23	B C
22. Jack Tone Rd./Colony Rd./SR 99 Southbound Ramps	Signal	AM PM	10 12	B B
23. Colony Rd./SR 99 Northbound Ramps/Hoff Rd.	All-way Stop-Controlled	AM PM	8 9	A A
24. Jack Tone Rd./SR 99 Southbound Ramps	Signal	AM PM	8 12	A B
25. Austin Rd./Ripon Rd.	All-way Stop-Controlled	AM PM	11 15	B B
26. Jack Tone Rd./Ripon Rd.	Signal	AM PM	33 31	C C

Notes:
Bold type indicates unacceptable operations.
1. Delay at these locations is outside the range of the software.
Source: Fehr & Peers, 2009.

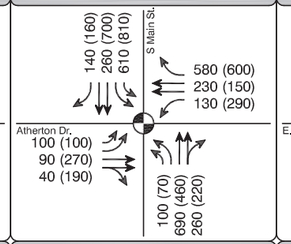
1. S. Main St./SR 120 WB Ramps



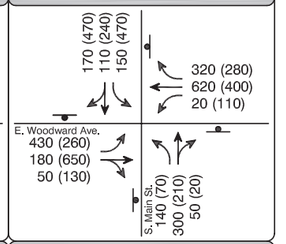
2. S. Main St./SR 120 EB Ramps



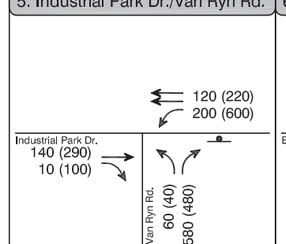
3. S. Main St./Atherton Dr.



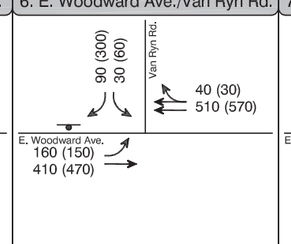
4. S. Main St./E Woodward Ave.



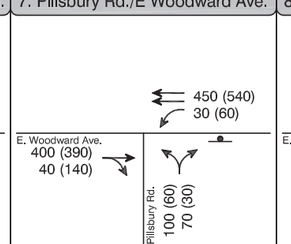
5. Industrial Park Dr./Van Ryn Rd.



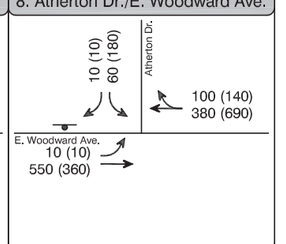
6. E. Woodward Ave./Van Ryn Rd.



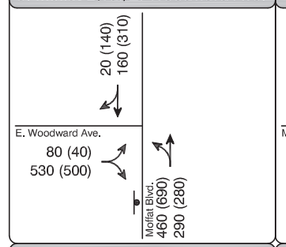
7. Pillsbury Rd./E Woodward Ave.



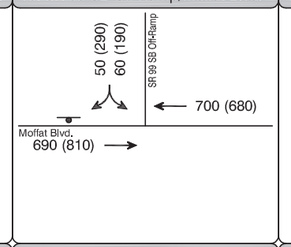
8. Atherton Dr./E. Woodward Ave.



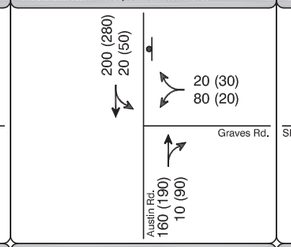
9. Moffat Blvd./E. Woodward Ave.



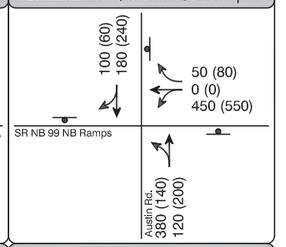
10. SR 99 SB Off-Ramp/Moffat Blvd.



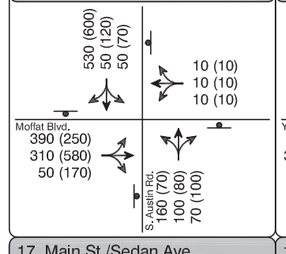
11. Austin Rd./Graves Rd.



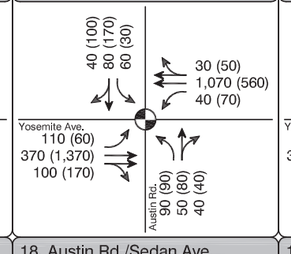
12. Austin Rd./SR 99 NB Ramps



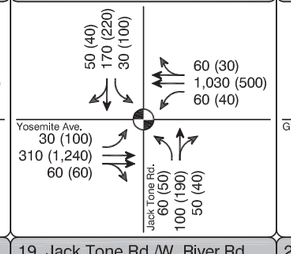
13. Austin Rd./Moffat Blvd.



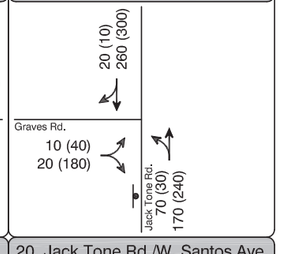
14. Austin Rd./Yosemite Ave.



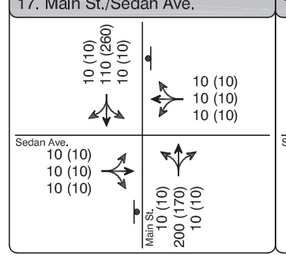
15. Jack Tone Rd./Yosemite Ave.



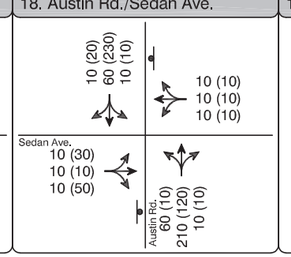
16. Jack Tone Rd./Graves Rd.



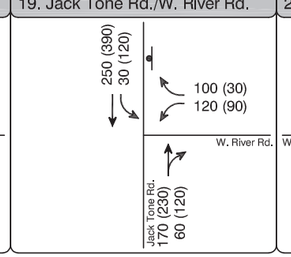
17. Main St./Sedan Ave.



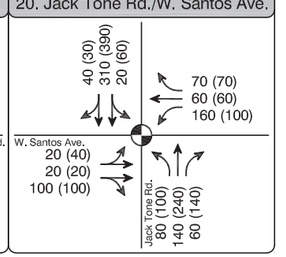
18. Austin Rd./Sedan Ave.



19. Jack Tone Rd./W. River Rd.



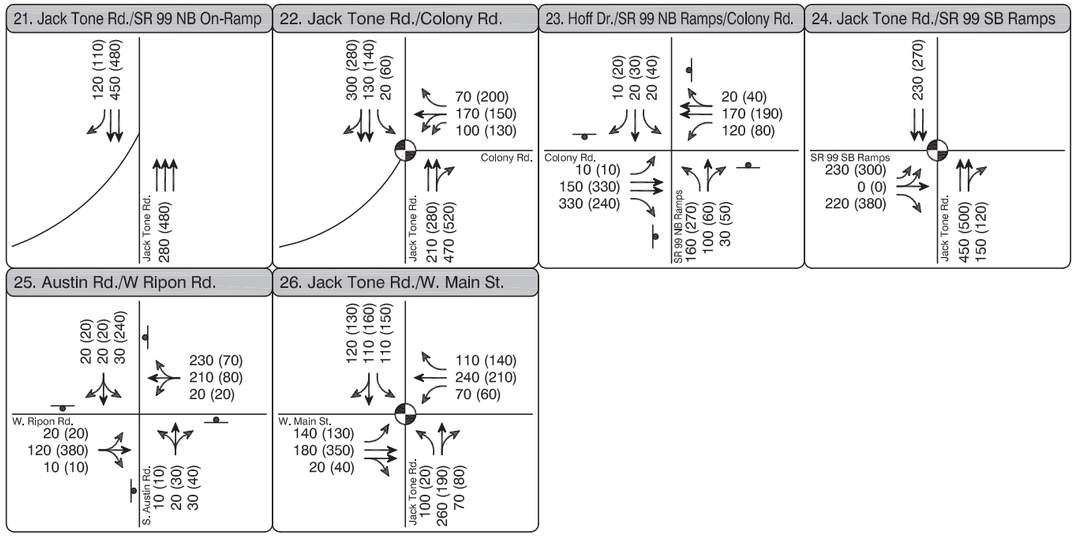
20. Jack Tone Rd./W. Santos Ave.



Source: Fehr & Peers

FIGURE 5.9-12A

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions



Source: Fehr & Peers

PBS&J

FIGURE 5.9-12B

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

- Main Street/Woodward Avenue
- Van Ryn Avenue/Industrial Park Drive
- Woodward Avenue/Moffat Boulevard
- Moffat Boulevard/SR 99 Southbound Off-Ramp
- Austin Road/SR 99 Northbound Ramps
- Moffat Boulevard/Austin Road/SR 99 Southbound On-Ramps

It should be noted that, while the Main Street/Atherton Drive intersection was assumed to be improved under cumulative conditions, poor operations at the Main Street/SR 120 Eastbound Ramps intersection causes queues to spill back into the Atherton Drive intersection. These long queues lead to poor operations at the Main Street/Atherton Drive intersection.

The results above indicate that the Austin Road/SR 99 interchange is deficient under cumulative no project conditions since increased traffic accessing southern Manteca overwhelms the ramp terminal intersections. As an additional evaluation, the operations of the Austin Road/ SR 99 interchange were also analyzed under cumulative no project conditions with the improvements described under the existing plus project with partial buildout mitigation. The purpose of this evaluation was to determine if the interim improvements described as part of the partial buildout mitigation could adequately serve cumulative no project demand. The results of this evaluation (shown in Appendix G) indicate that even with these improvements in place, the ramp terminal intersections are overwhelmed and operate at LOS F conditions in the PM peak hour.

The finding above is relevant because it indicates that even in the absence of the ARBPRC project, the existing Austin Road/SR 99 interchange is deficient under cumulative conditions from both a design and operations perspective. The only solution to this deficiency is to relocate the interchange to the south at McKinley Avenue The ARBPRC project is a key element in implementing this solution because the project can provide a substantial amount of funding and would provide the right of way for the roads approaching the new interchange.

Freeway Segment Operations

Table 5.9-12 displays the cumulative conditions freeway mainline ADT forecasts and the results of the mainline operations analysis. As shown in Table 5.9-12, even though widening projects are assumed on I-5, SR 120, and SR 99 north of SR 120, all 16 freeway segments are expected to operate at an unacceptable LOS F.

CUMULATIVE PLUS PROJECT ANALYSIS

This section describes the potential transportation impacts of the proposed project under cumulative plus project conditions. This section also recommends mitigation measures to reduce the significance of cumulatively considerable project-related impacts to the transportation system. The standards of significance described under the existing plus project conditions analysis apply to this section as well.

TABLE 5.9-12

FREEWAY LEVEL OF SERVICE – CUMULATIVE NO PROJECT CONDITIONS

Freeway	Segment	Lanes	Cumulative Conditions	
			ADT	LOS
SR 120	I-5 to Yosemite Avenue	6	137,100	**F**
	Yosemite Avenue to Airport Way	6	134,400	**F**
	Airport Way to Union Road	6	131,300	**F**
	Union Road to Main Street	6	130,400	**F**
	Main Street to SR 99	6	199,335	**F**
SR 99	South of Main Street (Ripon)	6	197,600	**F**
	Main Street to Wilma Avenue	6	224,700	**F**
	Wilma Avenue to Jack Tone Road	6	225,500	**F**
	Jack Tone Road to Austin Road	6	235,400	**F**
	Austin Road to SR 120	6	225,800	**F**
	SR 120 to Yosemite Avenue	6	157,500	**F**
	Yosemite Avenue to Lathrop Road	6	145,900	**F**
	Lathrop Road to French Camp Road	6	147,800	**F**
	North of French Camp Road	6	148,700	**F**
I-5	South of SR 120	12	293,700	**F**
	SR 120 to Louise Avenue	8	212,700	**F**

Notes:
Bold type indicates unacceptable operations.
Source: Fehr & Peers, 2009.

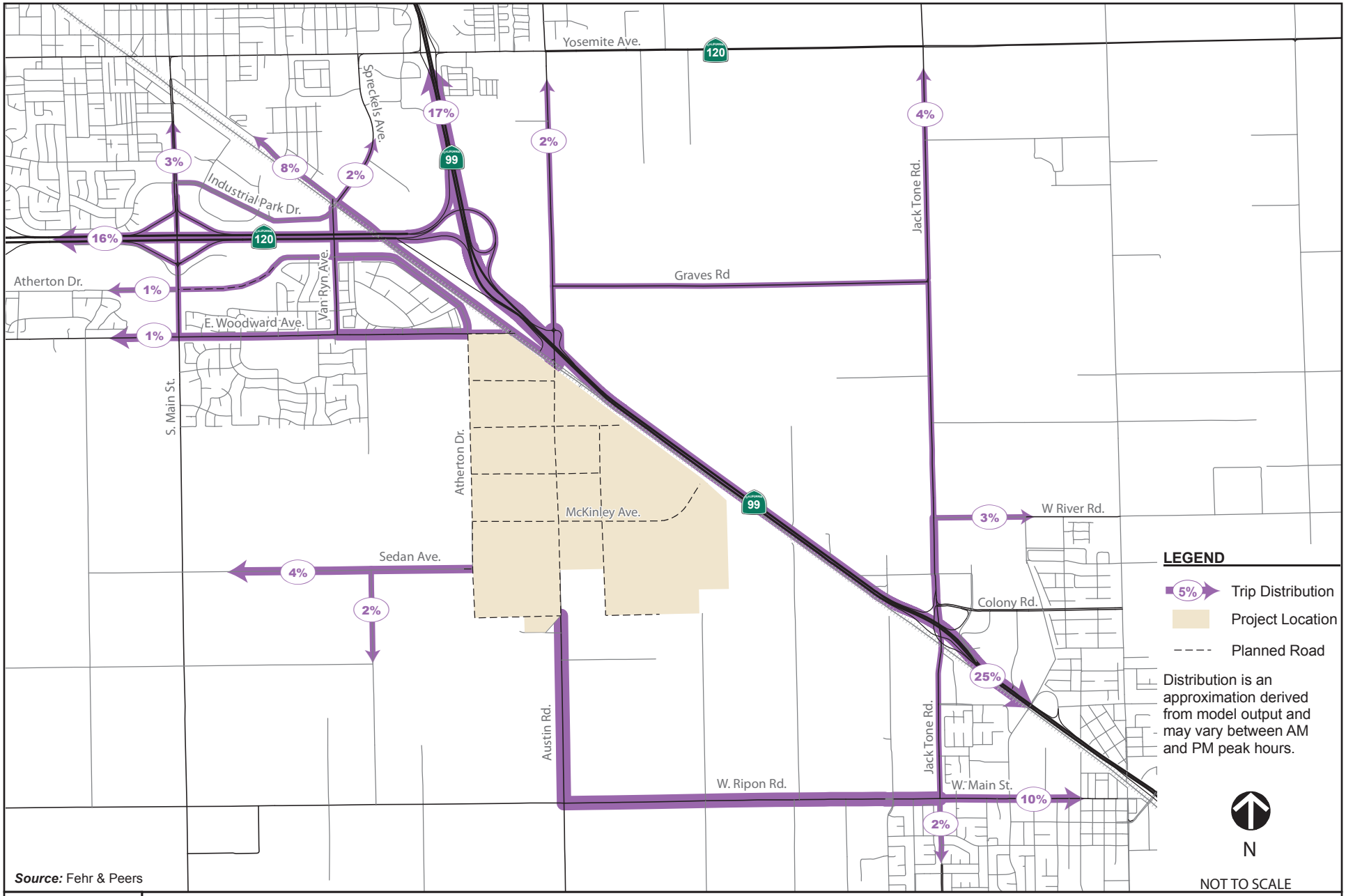
Methods of Analysis

To determine the project's impact on the transportation system, the project trip generation data described in the existing plus project analysis section were incorporated into the 2025 version of the SJCOG TDF model described in the cumulative no project analysis section. The model was run to determine the project's trip distribution pattern under cumulative conditions.

The trip distribution from the SJCOG TDF model is shown in Figure 5.9-13. Note that this trip distribution pattern is slightly different than the one presented in the existing plus project section. This change in trip distribution reflects the different travel patterns under cumulative plus project conditions as more residents and businesses locate to southern Manteca and Ripon and as traffic congestion increases. As was done in the previous analyses, the results of the cumulative plus project run of the SJCOG TDF model were processed using the difference method to reduce model error.

Intersection Operations

Table 5.9-13 summarizes the results of the cumulative plus project intersection LOS analysis. Figures 5.9-14a and 5.9-14b present the AM and PM peak hour turning movement volumes and intersection controls. The cumulative plus project intersection operations results are compared to the cumulative no project intersection operations results to highlight changes in delay and LOS caused by the project. Detailed intersection LOS calculation sheets are presented in Appendix G.



Source: Fehr & Peers

FIGURE 5.9-13

Project Trip Distribution - Cumulative Plus Project Conditions

The results in Table 5.9-13 indicate that 13 of the 26 study intersections would operate an unacceptable LOS under cumulative plus project conditions during the AM or PM peak hour. Additionally, a peak hour signal warrant at the unsignalized intersections indicated that the warrant was met at all locations with an unacceptable LOS in the AM and/or PM peak hour. See Appendix G for AM and PM peak hour signal warrant analysis under cumulative plus project conditions. The following list summarizes the intersections with an unacceptable LOS under cumulative plus project conditions:

- Main Street/SR 120 Westbound Ramps
- Main Street/SR 120 Eastbound Ramps
- Main Street/Atherton Drive
- Main Street/Woodward Avenue
- Van Ryn Avenue/Industrial Park Drive
- Woodward Avenue/Van Ryn Avenue
- Woodward Avenue/Pillsbury Road
- Woodward Avenue/Atherton Drive
- Woodward Avenue/Moffat Boulevard
- Moffat Boulevard/SR 99 Southbound Off-Ramp
- Austin Road/SR 99 Northbound Ramps
- Moffat Boulevard/Austin Road/SR 99 Southbound On-Ramps
- Austin Road/Ripon Road

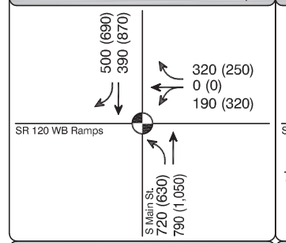
Freeway Segment Operations

Table 5.9-14 displays the results of the cumulative plus project conditions freeway analysis. As shown in the table, the addition of project-related traffic exacerbates unacceptable freeway mainline LOS on all 16 freeway segments.

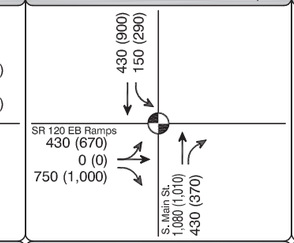
Cumulative Impacts and Mitigation Measures

This section describes the cumulative impacts of the ARBPRC. Measures to reduce the significance of project impacts are also described in this section. As described previously, few future roadway improvements were assumed to be constructed under cumulative conditions because the updated and fully funded PFIP fee has not yet been adopted by the Manteca City Council. This assumption, combined with the growth anticipated in the future, leads to a large number of roadway facilities that do not meet the City LOS standard and a large number of cumulative impacts. This section describes those impacts and recommends improvements to mitigate the impacts.

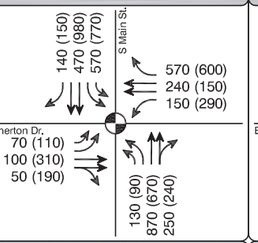
1. S. Main St./SR 120 WB Ramps



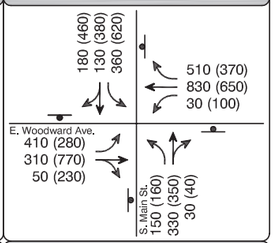
2. S. Main St./SR 120 EB Ramps



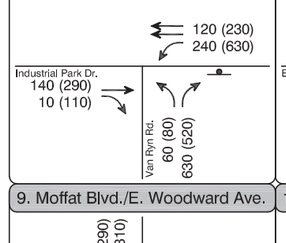
3. S. Main St./Atherton Dr.



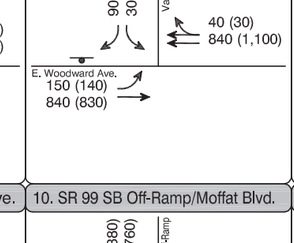
4. S. Main St./E Woodward Ave.



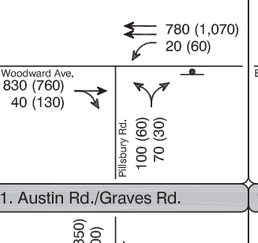
5. Industrial Park Dr./Van Ryn Rd.



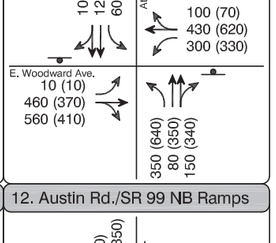
6. E. Woodward Ave./Van Ryn Rd.



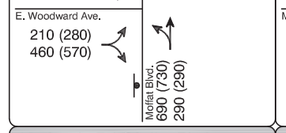
7. Pillsbury Rd./E Woodward Ave.



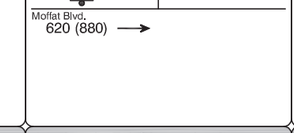
8. Atherton Dr./E. Woodward Ave.



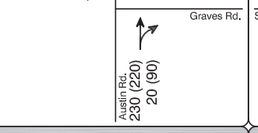
9. Moffat Blvd./E. Woodward Ave.



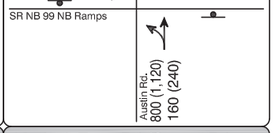
10. SR 99 SB Off-Ramp/Moffat Blvd.



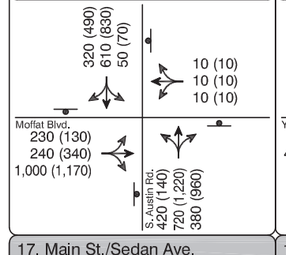
11. Austin Rd./Graves Rd.



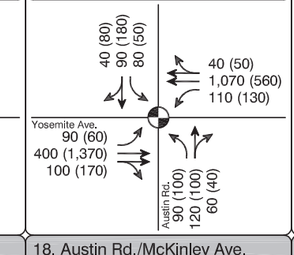
12. Austin Rd./SR 99 NB Ramps



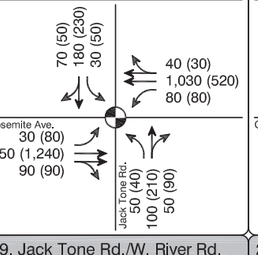
13. Austin Rd./Moffat Blvd.



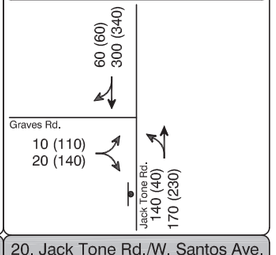
14. Austin Rd./Yosemite Ave.



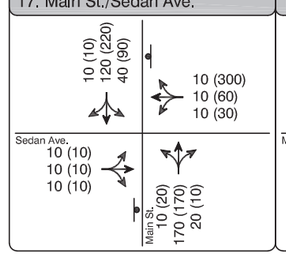
15. Jack Tone Rd./Yosemite Ave.



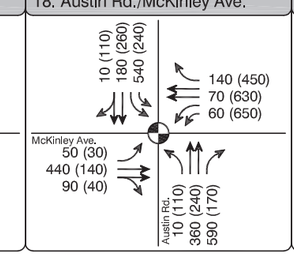
16. Jack Tone Rd./Graves Rd.



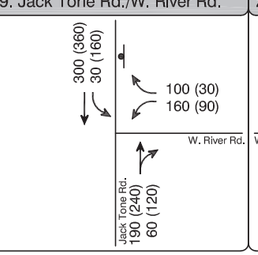
17. Main St./Sedan Ave.



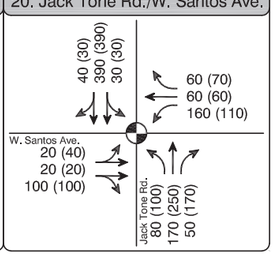
18. Austin Rd./McKinley Ave.



19. Jack Tone Rd./W. River Rd.



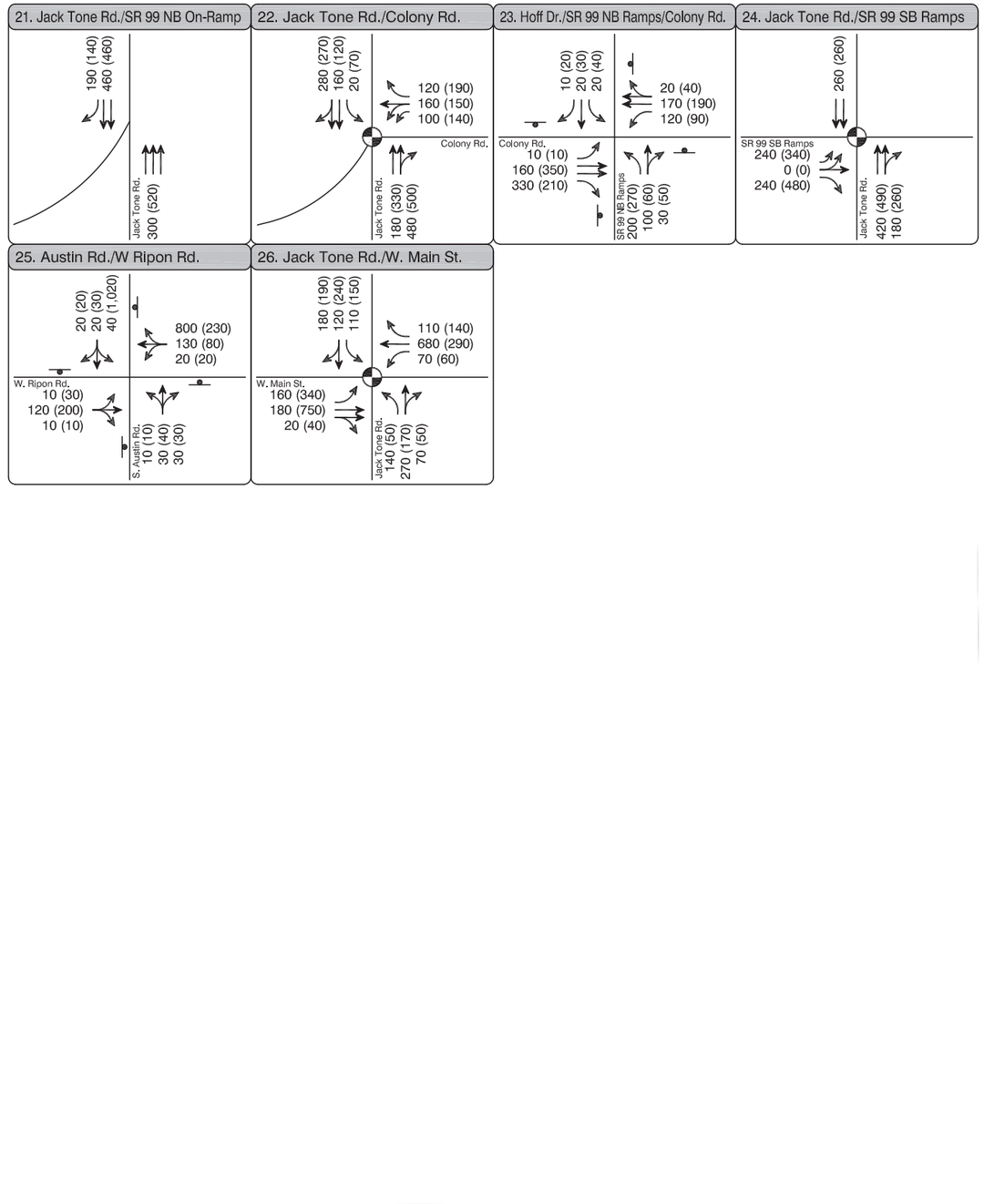
20. Jack Tone Rd./W. Santos Ave.



Source: Fehr & Peers

FIGURE 5.9-14A

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions



Source: Fehr & Peers

PBS&J

FIGURE 5.9-14B

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

TABLE 5.9-13

INTERSECTION LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS

Intersection	Control	Peak Hour	Cumulative No Project Conditions		Cumulative Plus Project Conditions	
			Delay	LOS	Delay	LOS
1. Main St./SR 120 Westbound Ramps	Signal	AM	45	D	50	D
		PM	**>150[2]**	**F**	**>150[2]**	**F**
2. Main St./SR 120 Eastbound Ramps	Signal	AM	**70**	**E**	**89**	**F**
		PM	**132**	**F**	**>150**	**F**
3. Main St./Atherton Dr.	All-way Stop-Controlled	AM	**88**	**F**	**131**	**F**
		PM	**129**	**F**	**>150**	**F**
4. Main St./Woodward Ave.	All-way Stop-Controlled	AM	**137**	**F**	**>150**	**F**
		PM	**>150**	**F**	**>150**	**F**
5. Van Ryn Ave./Industrial Park Dr.	Side-Street Stop-Controlled	AM	18	C	21	C
		PM	**>150**	**F**	**>150**	**F**
6. Van Ryn Ave./Woodward Ave.	Side-Street Stop-Controlled	AM	29	D	**60**	**F**
		PM	27	D	**74**	**F**
7. Woodward Ave./Pillsbury Rd.	Side-Street Stop-Controlled	AM	16	C	**41**	**E**
		PM	16	C	29	D
8. Woodward Ave./Atherton Dr.	Side-Street Stop-Controlled	AM	16	C	**>150**	**F**
		PM	30	D	**>150**	**F**
9. Woodward Ave./Moffat Blvd.	Side-Street Stop-Controlled	AM	**>150**	**F**	**>150**	**F**
		PM	**>150**	**F**	**>150**	**F**
10. Moffat Blvd./SR 99 Southbound Off-Ramp	Side-Street Stop-Controlled	AM	**>150**	**F**	**>150**	**F**
		PM	**>150**	**F**	**>150**	**F**
11. Austin Rd./Graves Rd.	Side-Street Stop-Controlled	AM	12	B	13	B
		PM	12	B	17	C
12. Austin Rd./SR 99 Northbound Ramps	All-way Stop-Controlled	AM	24	C	**>150**	**F**
		PM	**70**	**F**	**>150**	**F**
13. Moffat Blvd./Austin Rd./SR 99 Southbound On-Ramps	All-way Stop-Controlled	AM	**47**	**E**	**132**	**F**
		PM	**59**	**F**	**114**	**F**
14. Austin Rd./Yosemite Ave.	Signal	AM	29	C	32	C
		PM	31	C	37	D
15. Jack Tone Rd./Yosemite Ave.	Signal	AM	20	B	20	B
		PM	26	C	26	C
16. Jack Tone Rd./Graves Rd.	Side-Street Stop-Controlled	AM	11	B	13	B
		PM	14	B	20	C
17. Sedan Ave./Main St.	Side-Street Stop-Controlled	AM	11	B	12	B
		PM	12	B	23	C
18. McKinley Ave/Austin Rd.	Signal[1]	AM	12	B	33	C
		PM	12	B	20	B
19. Jack Tone Rd./W. River Rd.	Side-Street Stop-Controlled	AM	15	B	18	C
		PM	28	D	33	D
20. Jack Tone Rd./Santos Ave.	Signal	AM	19	B	22	C
		PM	23	C	22	C
22. Jack Tone Rd./Colony Rd./SR 99 Southbound Ramps	Signal	AM	10	B	9	A
		PM	12	B	12	B
23. Colony Rd./SR 99 Northbound Ramps/Hoff Rd.	All-way Stop-Controlled	AM	8	A	8	A
		PM	9	A	9	A
24. Jack Tone Rd./SR 99 Southbound Ramps	Signal	AM	8	A	9	A
		PM	12	B	14	B
25. Austin Rd./Ripon Rd.	All-way Stop-Controlled	AM	11	B	**78**	**F**
		PM	15	B	**>150**	**F**
26. Jack Tone Rd./Ripon Rd.	Signal	AM	33	C	48	D
		PM	31	C	41	D

Notes:
Bold type indicates unacceptable operations.
1. Side-street stop-controlled under no project conditions.
2. Delay at these locations is outside the range of the software.
Source: Fehr & Peers, 2009.

TABLE 5.9-14

FREEWAY LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS

Freeway	Segment	Lanes	Cumulative No Project Conditions		Cumulative Plus Project Conditions	
			ADT	LOS	ADT	LOS
SR 120	I-5 to Yosemite Avenue	6	137,100	**F**	145,900	**F**
	Yosemite Avenue to Airport Way	6	134,400	**F**	144,000	**F**
	Airport Way to Union Road	6	131,300	**F**	141,400	**F**
	Union Road to Main Street	6	130,400	**F**	140,400	**F**
	Main Street to SR 99	6	199,335	**F**	124,200	**F**
SR 99	South of Main Street (Ripon)	6	197,600	**F**	213,700	**F**
	Main Street to Wilma Avenue	6	224,700	**F**	238,300	**F**
	Wilma Avenue to Jack Tone Road	6	225,500	**F**	236,000	**F**
	Jack Tone Road to Austin Road	6	235,400	**F**	248,400	**F**
	Austin Road to SR 120	6	225,800	**F**	245,300	**F**
	SR 120 to Yosemite Avenue	6	157,500	**F**	172,900	**F**
	Yosemite Avenue to Lathrop Road	6	145,900	**F**	158,300	**F**
	Lathrop Road to French Camp Road	6	147,800	**F**	155,800	**F**
	North of French Camp Road	6	148,700	**F**	155,800	**F**
I-5	South of SR 120	12	293,700	**F**	300,300	**F**
	SR 120 to Louise Avenue	8	212,700	**F**	214,800	**F**

Notes:
Bold type indicates unacceptable operations.
Source: Fehr & Peers, 2009.

Table 5.9-15 presents the cumulative plus project conditions intersection LOS with mitigation measures. Figure 5.9-15 presents the cumulative plus project with mitigation trip distribution, and Figure 5.9-16 shows the AM and PM peak hour traffic volumes and recommended lane configurations under cumulative plus project with mitigation conditions. The table and figures are presented at the end of this section. Appendix G contains the detailed intersection LOS calculations for the cumulative plus project with mitigation scenario.

5.9-15 The proposed project would cause an increase in traffic which would degrade the signalized intersection operations to unacceptable levels at the Main Street/SR 120 Ramp terminal intersections.

As shown in Table 5.9-14, implementation of the ARBPRC project would exacerbate unacceptable intersection operations at the two Main Street/SR 120 Ramp terminal intersections in the AM and/or PM peak hour. The increase in delay caused by the project exceeds three seconds. This is a ***significant impact***.

Mitigation Measure

This impact could be mitigated with the following:

5.9-15 *The project applicant shall pay the updated PFIP interchange fee, or if this fee is not yet in place, the project shall pay a fair-share fee for the Main Street/SR 120 interchange improvements.*

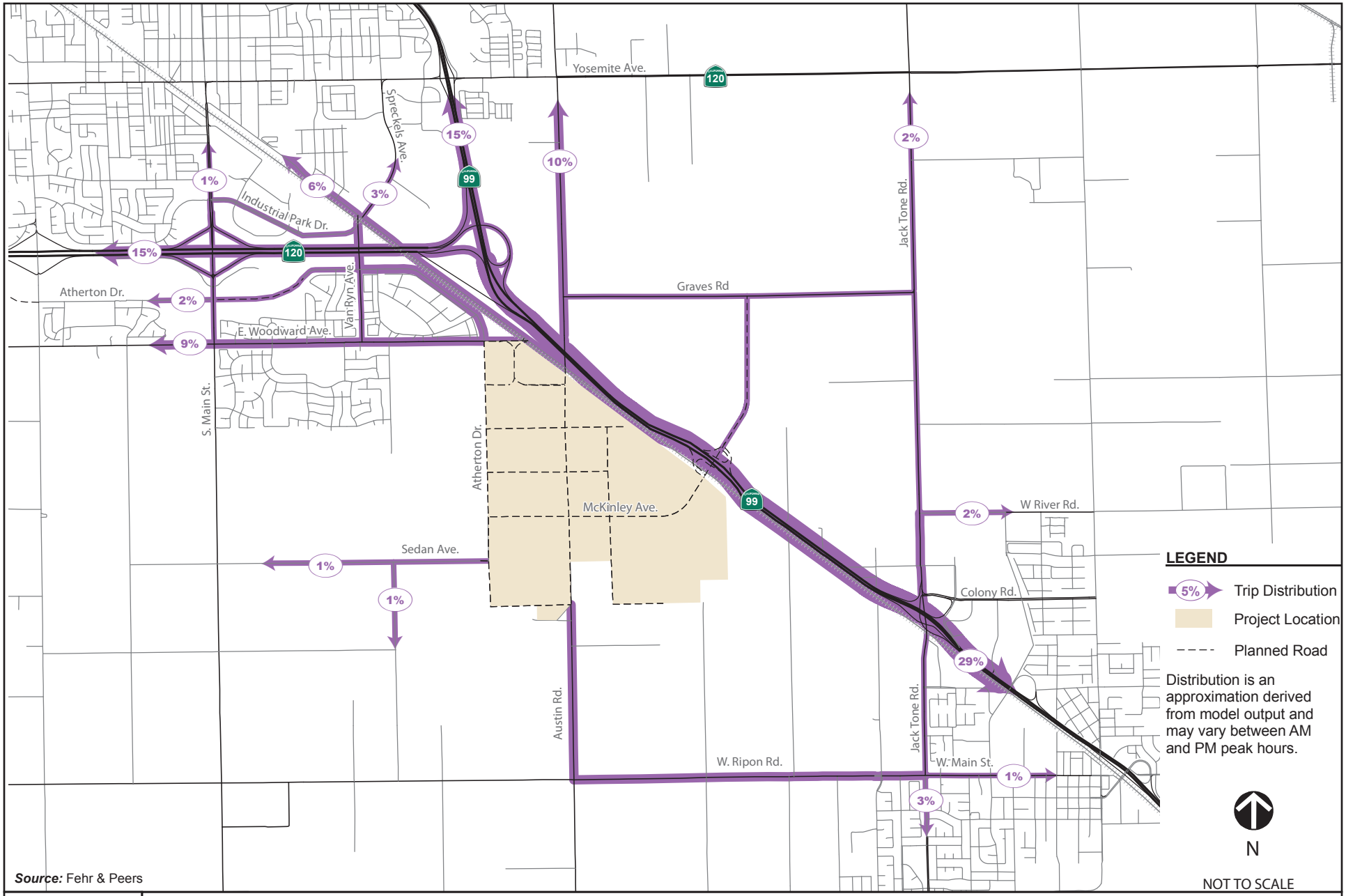
TABLE 5.9-15

INTERSECTION LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT WITH MITIGATION

Intersection	Peak Hour	Cumulative Plus Project Conditions			Cumulative Plus Project with Mitigation		
		Control	Delay	LOS	Control	Delay	LOS
1. Main St./SR 120 Westbound Ramps	AM PM	Signal	50 **>150**[2]	D **F**	Signal	12 20	B B
2. Main St./SR 120 Eastbound Ramps	AM PM	Signal	**89** **>150**	**F** **F**	Signal	16 24	B C
3. Main St./Atherton Dr.	AM PM	Signal	**131** **>150**	**F** **F**	Signal	48 53	D D
4. Main St./Woodward Ave.	AM PM	All-way Stop-Controlled	**>150** **>150**	**F** **F**	Signal	41 47	D D
5. Van Ryn Ave./Industrial Park Dr.	AM PM	Side-Street Stop-Controlled	21 **>150**	C **F**	Signal	13 24	B C
6. Van Ryn Ave./Woodward Ave.	AM PM	Side-Street Stop-Controlled	**60** **74**	**F** **F**	Signal	9 11	A B
7. Woodward Ave./Pillsbury Rd.	AM PM	Side-Street Stop-Controlled	**41** 29	**E** D	Signal	8 9	A A
8. Woodward Ave./Atherton Dr.	AM PM	Side-Street Stop-Controlled	**>150** **>150**	**F** **F**	Signal	23 29	C C
9. Woodward Ave./Moffat Blvd.	AM PM	Side-Street Stop-Controlled	**>150** **>150**	**F** **F**	Signal	12 24	B C
10. Moffat Blvd./SR 99 Southbound Off-Ramp	AM PM	Side-Street Stop-Controlled	**>150** **>150**	**F** **F**	N/A	N/A	N/A[3]
12. Austin Rd./SR 99 Northbound Ramps	AM PM	All-way Stop-Controlled	**>150** **>150**	**F** **F**	N/A	N/A	N/A[3]
13. Moffat Blvd./Austin Rd./SR 99 Southbound On-Ramps	AM PM	All-way Stop-Controlled	**132** **114**	**F** **F**	Side-Street Stop-Controlled	15 18	B C
14. Austin Rd./Yosemite Ave.	AM PM	Signal	32 37	C D	Signal	53 45	D D
16. Jack Tone Rd./Graves Rd.	AM PM	Side-Street Stop-Controlled	13 20	B C	Side-Street Stop-Controlled	17 19	C C
25. Austin Rd./Ripon Rd.	AM PM	All-way Stop-Controlled	**78** **>150**	**F** **F**	All-way Stop-Controlled	11 21	B[4] C[4]
27. Woodward Ave. Extension/Woodward Ave.	AM PM	Signal	--	--	Signal	18 20	B B
28. Woodward Ave. Extension/Austin Rd.	AM PM	Signal	--	--	Signal	20 27	B C

Notes:
Bold type indicates unacceptable operations.
1. Side-street stop-controlled under no project conditions.
2. Delay at these locations is outside the range of the software.
3. Intersection no longer exists under this scenario.
4. This LOS analysis assumes implementation of Mitigation Measure 5.9-6a.

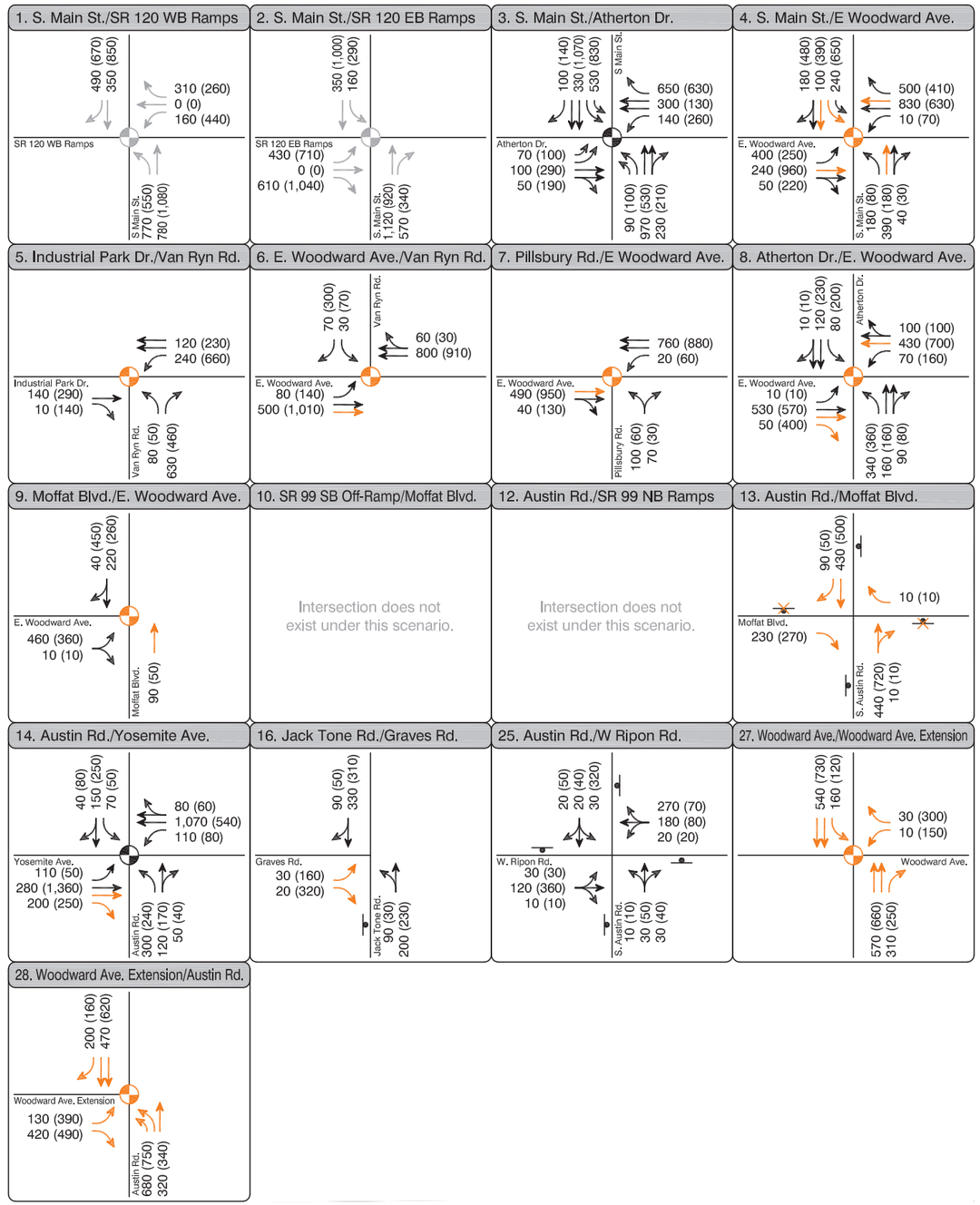
Source: Fehr & Peers, 2009.



Source: Fehr & Peers

FIGURE 5.9-15

Project Trip Distribution - Cumulative Plus Project Conditions with Mitigation



Source: Fehr & Peers

FIGURE 5.9-16

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project With Mitigation

While this mitigation measure would provide acceptable LOS D or better operations at the ramp terminal intersections, implementation would require approval from Caltrans. Additionally, since a full funding program has not yet been established, there is no guarantee that the PFIP or fair-share fee paid by the project applicant would (when combined with other revenues) fully fund the project. Therefore, this impact is considered ***significant and unavoidable***.

As described in the existing setting section, the City of Manteca, Caltrans, and SJCOG are working together to improve the interchanges along the SR 120 corridor in Manteca. The PSR for the Union Road/SR 120 interchange has just been completed and the PSR for the Airport Way/SR 120 interchange is underway. Given the similarity between the Main Street interchange and the others along SR 120, it was assumed that the Main Street interchange design will be nearly identical to the recently approved design at the Union Road interchange.

5.9-16 The proposed project would exacerbate unacceptable operations at the Main Street/Atherton Drive intersection.

As shown in Table 5.9-13, implementation of the ARBPRC project would exacerbate unacceptable AM and PM peak hour intersection operations and increase delay by more than three seconds at this intersection. This is a ***significant impact***.

Mitigation Measure

As described earlier, congestion at this intersection is the result of queues spilling back from the Main Street/SR 120 interchange. Implementing Mitigation Measure 5.9-15 would eliminate this queue spillback and the impacts at the Main Street/Atherton Drive intersection. While the Main Street interchange improvements would provide acceptable LOS D operations at this intersection, there is no guarantee that the interchange improvements will be approved or funded, therefore this impact is considered ***significant and unavoidable***.

5.9-16 *Implement Mitigation Measure 5.9-15.*

5.9-17 The proposed project exacerbates unacceptable operations at the Main Street/ Woodward Avenue intersection.

As shown in Table 5.9-13, implementation of the ARBPRC project would exacerbate unacceptable AM and PM peak hour intersection operations and increase delay by more than three seconds at this intersection. In addition, the AM and PM peak hour signal warrant would be met at this location. This is a ***significant impact***.

Mitigation Measure

This impact could be mitigated with the following:

5.9-17 *The City shall update the PFIP Transportation Project List to include the following project at the Main Street/Woodward Avenue intersection.*

- *Install a traffic signal;*
- *Construct two left, one through, and a shared through-right lane on the southbound approach.*
- *Construct one left, one through, and a shared through-right lane on the northbound approach.*
- *Construct a second through lane and add a receiving lane west of Main Street that extends at least 600 feet.*
- *Construct separate left, through, and right-turn lanes on the eastbound approach.*

To implement these measures, widening in the northwest and southwest quadrants of the intersection would be necessary. Consistent with past practices, the City would require right-of-way dedications in these quadrants (in conjunction with planned residential developments) to ensure that the above improvements can be constructed. The City shall update the PFIP project list to include roadway widening on Main Street to accommodate the intersection improvements. The City shall also require that all future development projects pay the PFIP fee for local roadways at the time of building permit approval.

This mitigation measure would provide acceptable LOS D or better operations. Therefore, this impact is considered ***less than significant*** with mitigation.

5.9-18 The proposed project would exacerbate unacceptable operations at the Van Ryn Avenue/Industrial Park Drive intersection.

As shown in Table 5.9-13, implementation of the ARBPRC project would exacerbate unacceptable PM peak hour intersection operations and increase delay by more than three seconds at this intersection. In addition, the AM and PM peak hour signal warrant would be met at this location. This is a ***significant impact***.

Mitigation Measure

This impact could be mitigated with the following:

5.9-18 *The City shall update the PFIP Transportation Project List to include a roundabout or new traffic signal at the Van Ryn Avenue/Industrial Park Drive intersection. Any new traffic signal shall be pre-empted by the crossing protection devices at the adjacent Union Pacific Railroad crossing and be coordinated with the Moffat Boulevard/Spreckels Avenue intersection. The City shall also require that all future development projects pay the PFIP fee for local roadways at the time of building permit approval.*

With this mitigation measure, this impact is considered ***less than significant***.

5.9-19 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Woodward Avenue/Van Ryn Avenue intersection.

As shown in Table 5.9-13, implementation of the ARBPRC project would degrade AM and PM peak hour intersection operations to an unacceptable level. In addition, the AM and PM peak hour signal warrant is met at this location. This is a ***significant impact***.

Mitigation Measure

This impact could be mitigated with the following:

5.9-19 *The City shall update the PFIP Transportation Project list to include a new traffic signal at the Van Ryn Avenue/Woodward Avenue intersection. It is also recommended that the City update the PFIP project list to include the widening of Woodward Avenue to four lanes between Bridewell Avenue and Austin Road The City shall also require that all future development projects pay the PFIP fee for local roadways at the time of building permit approval.*

With this mitigation measure, this impact is considered ***less than significant***.

5.9-20 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Woodward Avenue/Pillsbury Road intersection.

As shown in Table 5.9-13, implementation of the ARBPRC project would degrade AM peak hour intersection operations to an unacceptable level. In addition, the AM peak hour signal warrant is met at this location. This is a ***significant impact***.

Mitigation Measure

This impact could be mitigated with the following:

5.9-20 *The City shall update the PFIP Transportation Project list to include a new traffic signal at the Woodward Avenue/Pillsbury Avenue intersection. It is also recommended that the City update the PFIP project list to include the widening of Woodward Avenue to four lanes between Bridewell Avenue and Austin Road The City shall also require that all future development projects pay the PFIP fee for local roadways at the time of building permit approval.*

With this mitigation measure, this impact is considered ***less than significant***.

5.9-21 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Woodward Avenue/Atherton Drive intersection.

As shown in Table 5.9-13, implementation of the ARBPRC project would degrade AM and PM peak hour intersection operations to an unacceptable level. In addition, the AM and PM peak hour signal warrant is met at this location. This is a ***significant impact***.

Mitigation Measure

This impact could be mitigated with the following:

5.9-21 *The City shall update the PFIP Transportation Project list to include a new traffic signal at the Woodward Avenue/Atherton Drive intersection. It is also recommended that the City update the PFIP project list to include the widening of Woodward Avenue to four lanes between Bridewell Avenue and Austin Road The City shall also require that all future development projects pay the PFIP fee for local roadways at the time of building permit approval.*

With this mitigation measure, this impact is considered ***less than significant***.

5.9-22 The proposed project would exacerbate unacceptable operations at the four intersections around the Austin Road/SR 99 interchange.

As shown in Table 5.9-13, implementation of the ARBPRC project would exacerbate unacceptable intersection operations at the following four intersections:

- Woodward Avenue/Moffat Boulevard
- Moffat Boulevard/SR 99 Southbound Off-Ramp
- Austin Road/SR 99 Northbound Ramps
- Moffat Boulevard/Austin Road/SR 99 Southbound On-Ramps

In addition, all four intersections would meet the AM and/or PM peak hour signal warrants with implementation of the project. This is a ***significant impact***.

Mitigation Measure

Implementation of Mitigation Measure 5.9-1 would provide acceptable LOS D or better operations at these intersections.

Analysis of this mitigation measure under cumulative plus project conditions indicated that secondary impacts would be created at the Austin Road/Yosemite Avenue and Jack Tone Road/Graves Road intersections. The relocated interchange would provide additional capacity for project traffic to travel north along Austin Road Additionally, implementation of the new interchange draws local and regional traffic through the Jack Tone Road/Graves Road intersection. Implementation the following would provide acceptable operations at these two intersections.

5.9-22 *Include the following intersection modification at the Austin Road/Yosemite Avenue intersection in the PFIP project list:*

- *Construct an additional eastbound right-turn lane.*

In addition, the project applicant shall pay a fair-share fee to construct separate eastbound left and right-turn lanes at the Jack Tone Road/Graves Road intersection. The City shall also require that all future development projects pay the PFIP fee for local roadways at the time of building permit approval.

While Mitigation Measures 5.9-1 and 5.9-22 would provide acceptable operations at the affected intersections, there is no guarantee that sufficient funds will be raised, nor is there a guarantee that Caltrans will approve the new interchange. Moreover, there is no guarantee that Caltrans will approve any modifications to the Austin Road/Yosemite Avenue (SR 120) intersection, nor is there a guarantee that San Joaquin County will implement improvements at the Jack Tone Road/Graves Road intersection. Therefore, this impact is considered ***significant and unavoidable***.

5.9-23 The proposed project would exacerbate unacceptable operations at the Austin Road/ Ripon Road intersection.

As shown in Table 5.9-13, implementation of the ARBPRC project would exacerbate unacceptable operations during the AM and PM peak hour and increase intersection delay by more than three seconds. In addition, this intersection would meet the AM and PM peak hour signal warrant. This is a ***significant impact***.

Mitigation Measure

As described in the existing plus project section, mitigation at this intersection would require relocation of the Austin Road/SR 99 interchange. While the interchange relocation project would provide acceptable operations, implementation cannot be guaranteed. An alternative mitigation measure would involve construction of the following improvements:

- Widening Austin Road to four lanes between the southern project boundary and Ripon Rd;
- Widening Ripon Road to four lanes between Austin Road and Jack Tone Road; and
- Construction of a traffic signal at the widened Austin Road/Ripon Road intersection.

While this later mitigation measure would provide acceptable intersection operations, these projects are located in unincorporated San Joaquin County and the City of Ripon and implementation cannot be guaranteed by the city or project applicant. Additionally, there are significant right of way constraints along Ripon Road and this mitigation measure is considered infeasible. The impact at this location is considered ***significant and unavoidable***.

5.9-23 *Implement Mitigation Measure 5.9-1 and 5.9-7.*

5.9-24 The proposed project would exacerbate unacceptable freeway mainline operations on all 16 freeway mainline segments near the project.

As shown in Table 5.9-14, implementation of the ARBPRC project would exacerbate unacceptable operations on all 16 freeway mainline study facilities. This is a ***significant impact***.

Mitigation Measure

The project's impact could be reduced through the construction of additional freeway mainline lanes; however, as described in the cumulative no project section, all the planned improvements have already been assumed to be constructed and no other widenings are feasible. Since there are no other improvements planned for the study freeway facilities, it is recommended that the Mitigation Measure 5.9-24 be implemented.

While the SJCOG Regional Transportation Fee and Measure K sales tax will generate funds for future transportation improvements, there are no plans for any additional mainline improvements and it cannot be guaranteed that any improvements will be implemented. Therefore, this impact is considered ***significant and unavoidable***.

5.9-24 *The project applicant shall pay the San Joaquin County Regional Transportation Impact Fee prior to the approval of building permits.*

5.9-25 The proposed project would cause an increase in traffic which would exacerbate unacceptable operations at freeway merge, diverge, and weaving areas near the project.

As described earlier, ramp merge, ramp diverge, and weaving analyses were not conducted as part of this EIR because poor mainline operations translates into poor ramp area operations. With deficient mainline operations identified under cumulative plus project conditions, it would be redundant to evaluate ramp merge, ramp diverge, and weaving area operations. Therefore, based on the results of the freeway mainline analysis, the project is expected to degrade ramp merge, ramp diverge, and weaving area operations at all locations were mainline operations were identified as deficient. This is a ***significant impact***.

Mitigation Measure

Poor ramp merge, diverge, and weaving area operations could be mitigated by adding additional mainline lanes; however, because Caltrans has no additional widening projects planned and the availability of right-of-way is unknown, this mitigation is considered infeasible. Mitigation Measure 5.9-24 would provide additional funding for future regional roadway projects, but it cannot be guaranteed that the funding raised through this mitigation measure will be directed toward any projects that would reduce the significance of project-related impacts. Therefore this impact is considered ***significant and unavoidable***.

5.9-25 *Implement Mitigation Measure 5.9-24.*

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5.10 GLOBAL CLIMATE CHANGE

5.10 CLIMATE CHANGE

INTRODUCTION

This section addresses the generation of greenhouse gases[1] by the proposed Austin Road Business Park and Residential Community (ARBPRC) project and the potential contribution of the project to global climate change. It is widely recognized that anthropogenic emissions of greenhouse gases and aerosols are contributing to changes in the global climate, and that such changes are having and will have adverse effects on the environment, the economy, and public health. These are cumulative effects of past, present, and future actions worldwide. While worldwide contributions of greenhouse gases are expected to have widespread consequences, it is not possible to link particular changes to the environment of California to greenhouse gases emitted from a particular source or location. Thus, while it is possible to examine the quantity of greenhouse gases that would be emitted either directly or indirectly, that quantity cannot be tied to a particular adverse effect on the environment of California associated with climate change.

During construction and operation of the proposed project, greenhouse gases would be emitted as the result of construction activities, new direct operational sources, such as operation of emergency generators, natural gas usage, and operation of fleet vehicles, and indirect operational sources, such as production of electricity, transport of water, and decomposition of project-related wastes. Greenhouse gases would also be emitted by visitors and employees travelling to and from the project site via automobile.

This Draft EIR analysis is largely based upon the recent guidance from the San Joaquin Valley Air Pollution Control District (SJVAPCD) regarding assessing GHG emissions under CEQA. In addition, the EIR accounted for GHG assessment guidance prepared by the California Office of Planning and Research (OPR)[2] as well as approaches prepared by a number of professional associations and agencies that have published suggested approaches and strategies for complying with CEQA's environmental disclosure requirements. Such sources include the SJVAPCD Final Draft Staff Report – Climate Change Action Plan: Addressing GHG Emissions Impacts under CEQA, the SJVAPCD Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI), data from the URBEMIS 2007 air quality modeling software, and information from the California Air Resources Board (ARB), California Attorney General's Office, and the California Climate Action Team (CAT). In addition, quantitative data from the SJVAPCD; the San Joaquin Council of Governments (SJCOG); the ARB website; *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents* by Association of Environmental Professionals; the Office of the California Attorney General Global Warming Mitigation Measures; and *More Than an Inconvenient Truth: Making Sense of the California Global Warming Solutions Act of 2006* by

1 For the purposes of this analysis, the term "greenhouse gases" refers to carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, those gases regulated under California Assembly Bill 32 and the Kyoto Protocol of the United Nations Framework Convention on Climate Change.

2 Office of Planning and Research, Technical Advisory, *CEQA and Climate Change: Addressing Climate Change Through CEQA Review*, June 19, 2008.

Morrison & Forrester LLP were used to address climate change impacts. Additional qualitative information was included from the Intergovernmental Panel on Climate Change (IPCC) Climate Change 2007: Fourth Assessment Report.

The State of California, through Assembly Bill (AB) 32 and Executive Order S-3-05, has set statewide targets for the reduction of greenhouse gas emissions (see Applicable Plans and Regulations, below). The technical report prepared by the California Air Pollution Control Officers Association (CAPCOA), *CEQA and Climate Change*, states: "The goal of AB 32 and S-3-05 is the significant reduction of future greenhouse gas emissions in a state that is expected to rapidly grow in both population and economic output."[3] Accordingly, to achieve the State's goals, there will have to be a significant reduction in per capita greenhouse gas emissions. In addition, SJVAPCD recently set a district-wide reduction target of 29 percent from "business-as-usual" conditions for new development projects. This is explained in further detail below.

For this analysis, emissions from sources such as construction, vehicles, energy consumption, solid waste generation, and water supply and treatment are inventoried and discussed both quantitatively and qualitatively. All quantified emissions inventories are presented in metric tons unless otherwise indicated. No comment letters were received in response to the Notice of Preparation (NOP) regarding climate change.

ENVIRONMENTAL SETTING

Existing Conditions

Overview of Climate Change

Global climate change refers to changes in the normal[4] weather of the earth measured by alterations in wind patterns, storms, precipitation, and temperature relative to historical averages. Such changes vary considerably by geographic location. Over time, the earth's climate has undergone periodic ice ages and warming periods, as observed in fossil isotopes, ice core samples, and through other measurement techniques. Recent climate change studies use the historical record to predict future climate variations and the level of fluctuation that might be considered statistically normal given historical trends.

Temperature records from the Industrial Age (ranging from the late 18th century to the present) deviate from normal predictions in both rate and magnitude. Most modern climatologists predict an unprecedented warming period during the next century and beyond, a trend that is increasingly attributed to human-generated greenhouse gas emissions resulting from the industrial processes, transportation, solid waste generation, and land use patterns of the twentieth and twenty-first centuries. According to the IPCC, greenhouse gas emissions associated with human activities have grown since pre-industrial times, increasing by 70 percent between 1970 and 2004.[5] Increased

3 California Air Pollution Control Officers Association (CAPCOA), 2008. *CEQA and Climate Change*, p. 32.
4 "Normal" weather patterns include statistically normal variations within a specified range.
5 Intergovernmental Panel on Climate Change, 2007. R.B. Alley et al. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Summary for Policymakers.

greenhouse gas emissions are largely the result of increasing fuel consumption, particularly the incineration of fossil fuels.

The IPCC modeled several possible emissions trajectories to determine what level of reductions would be needed worldwide to stabilize global temperatures and minimize climate change impacts. Regardless of the analytic methodology used, global average temperature and sea level were predicted to rise under all scenarios.[6] In other words, there is evidence that emissions reductions can minimize climate change effects but cannot reverse them entirely. On the other hand, emissions reductions can reduce the severity of impacts, resulting in lesser environmental impacts. For example, the IPCC predicted that the range of global mean temperature change from year 1990 to 2100, given different emissions reduction scenarios, could range from 1.1°C to 6.4°C.

Climate change is an irreversible, significant cumulative impact on a global scale. The greenhouse gas emissions from an individual project, even a very large development project, would not individually generate sufficient greenhouse gas emissions to measurably influence global climate change.[7] Consideration of a project's impact to climate change, therefore, is essentially an analysis of a project's contribution to a cumulatively significant global impact through the project's emission of greenhouse gases.

Greenhouse Gases

Gases that trap heat in the atmosphere are called greenhouse gases because they transform the light of the sun into heat, similar to the glass walls of a greenhouse. Common greenhouse gases include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxides, chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), ozone, and aerosols. Without the natural heat-trapping effect of greenhouse gas, the earth's surface would be about 34°C cooler.[8] It is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. Global atmospheric concentrations of CO_2, CH_4, and N_2O have increased markedly since the late 18th century as a result of human activities, and now far exceed pre-industrial values.

Climate change results from radiative forcings and feedbacks. Radiative forcing is defined as the difference between the radiation energy entering the earth's atmosphere and the radiation energy leaving the atmosphere. Greenhouse gases allow solar radiation to penetrate the earth's atmosphere, but slow the release of atmospheric heat. A feedback is an internal process that amplifies or dampens the climate's response to a specific forcing. For example, the heat trapped by the atmosphere can cause temperatures to rise or alter wind and weather patterns. A gas or aerosol's global warming potential is defined as its ability to trap heat in the atmosphere; it is the

6 *Ibid.*

7 Association of Environmental Professionals (AEP). 2007. Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents. <www.califaep.org/userdocuments/File/AEP_Global_Climate_Change_June_29_Final.pdf>; and OPR, Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through CEQA Review, June 19, 2008, p. 6.

8 CARB, 2006. CARB Proposed Early Actions to Mitigate Climate Change in California.

"cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas."[9]

Individual greenhouse gases have varying global warming potentials and atmospheric lifetimes (see Table 5.10-1). The carbon dioxide equivalent (CO_2e) is a consistent methodology for comparing greenhouse gas emissions, because it normalizes various greenhouse gas emissions to a consistent metric. The reference gas for global warming potential is carbon dioxide; carbon dioxide has a global warming potential of one. By comparison, methane's global warming potential is 21, as methane has a much greater global warming effect than carbon dioxide on a molecule to molecule basis.[10]

TABLE 5.10-1

GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES OF SELECT GREENHOUSE GASES

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100 year time horizon)[1]
Carbon Dioxide	50–200	1
Methane	12 ±3	21
Nitrous Oxide	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC: Tetrafluoromethane (CF_4)	50,000	6,500
PFC: Hexafluoroethane (C_2F_6)	10,000	9,200
Sulfur Hexafluoride (SF_6)	3,200	23,900

Note:
1. The GWP values shown correspond to the IPCC second assessment report (1996). Although a third assessment report was prepared in 2001 with different numbers, per the California Climate Action Registry, 1996 values are to be used to maintain consistency with international practice (GRP v.3.1, January 2009).

Source: EPA, 2006b.

Of all greenhouse gases in the atmosphere, water vapor is the most abundant, important, and variable. It is not considered a pollutant; in the atmosphere, it maintains a climate necessary for life. The main source of water vapor is evaporation from the oceans (approximately 85 percent). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from ice and snow, and transpiration from plant leaves.

Carbon dioxide (CO_2) is an odorless, colorless gas, which has both natural and anthropogenic sources. Natural sources include decomposition of dead organic matter, respiration of bacteria, plants, animals, fungus, evaporation from oceans and volcanic outgassing. Anthropogenic sources of CO_2 are from burning coal, oil, natural gas and wood. Concentrations of CO_2 were estimated to

9 U.S. Environmental Protection Agency (EPA). 2006a. The U.S. Greenhouse Gas Emissions and Sinks: Fast Facts. Office of Atmospheric Programs.

10 U.S. Environmental Protection Agency (EPA), 2006b. Non CO_2 Gases Economic Analysis and Inventory. Global Warming Potentials and Atmospheric Lifetimes. <www.epa.gov/nonco2/econ-inv/table.html>.

be 379 parts per million (ppm) in 2005, which equates to an increase of 1.4 ppm per year since 1960.[11]

CO_2 is the most common greenhouse gas generated by California activities, constituting approximately 84 percent of all greenhouse gas emissions.[12] CO_2 emissions attributed to California activities are mainly associated with in-state fossil fuel combustion and fossil fuel combustion in out-of-state power plants supplying electricity to California. Other activities that produce CO_2 emissions include mineral production, waste combustion, and land use changes that reduce vegetation.

Methane (CH_4) is a flammable gas and is the main component of natural gas. When one molecule of CH_4 is burned in the presence of oxygen, one molecule of carbon dioxide and two molecules of water are released. A natural source of CH_4 is from the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain CH_4, which is extracted for fuel. Other sources are landfills, fermentation of manure, and cattle.

Nitrous oxide (N_2O), also known as laughing gas, is produced naturally by microbial processes in soil and water. Anthropogenic sources of N_2O include agricultural sources, industrial processing, fossil fuel-fired power plants, and vehicle emissions. Nitrous oxide also is used as an aerosol spray propellant and in medical applications.

Other gases that contribute to the greenhouse effect include ozone,[13] CFCs, HFCs, PFCs, SF_6, and aerosols. Generally, this analysis focuses on the major sources of greenhouse gases, including CO_2, N_2O, and CH_4 because these gases are much more prevalent in California. While gases other than CO_2, CH_4, and N_2O have much larger GWP, they are generally controllable and emitted in much smaller quantities.

Greenhouse Gas Emissions Inventories

Worldwide, United States, and California Inventories. A greenhouse gas inventory is an accounting of the amount of greenhouse gases emitted to or removed from the atmosphere over a specified period of time attributed to activities by a particular entity (e.g., annual emissions and reductions attributed to the State of California). A greenhouse gas inventory also provides information on the activities that cause emissions and removals, as well as the methods used to make the calculations. In 2004, total worldwide greenhouse gas emissions were estimated to be 49,000 teragrams (Tg; one Tg is equivalent to one million metric tons) CO_2e.[14] In 2006, greenhouse

11 IPCC, 2007. R.B. Alley et al. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Summary for Policymakers.

12 CEC, 2007. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004.

13 Ozone is a greenhouse gas; however, unlike other greenhouse gases, ozone in the troposphere is relatively short-lived. It is difficult to make an accurate determination of the contribution of ozone precursors (nitrogen oxides and volatile organic compounds) to global climate change. California Environmental Protection Agency, 2004. Technical Support Document for Staff Proposal Regarding Reduction of Greenhouse Gas Emissions from Motor Vehicles Climate Change Overview.

14 IPCC, 2007. R.B. Alley et al. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Summary for Policymakers.

gas emissions in the U.S. were estimated to be 7,054 Tg CO_2e, a 14.7 percent increase over 1990 emissions.[15]

California is the second largest contributor (by state) of greenhouse gas emissions in the U.S. and the sixteenth largest in the world.[16] In 2004, California produced 487 Tg CO_2e,[17] which is approximately 6.9 percent of 2004 U.S. emissions and 1.0 percent of global emissions. In California, the most common greenhouse gas is CO_2 from fossil fuel combustion, which constitutes approximately 81 percent of all greenhouse gas emissions.[18] The remainder of greenhouse gases only makes up a small percentage of the total: N_2O constitutes 6.8 percent, CH_4 6.4 percent, high GWP gases 3.5 percent, and non-fossil fuel CO_2 emissions constitute 2.3 percent.[19] CO_2 emissions in California are mainly associated with fossil fuel consumption in the transportation sector with the industrial sector as the second-largest source.[20] Electricity production from both in-state and out-of-state sources, agriculture, forestry, commercial, and residential activities comprise the balance of California's greenhouse gas emission sources.

As part of the California Global Warming Solutions Act of 2006 (AB 32), discussed below, the California ARB is required to establish a 2020 statewide greenhouse gas emissions limit equivalent to 1990 emissions. In addition, Executive Order S-3-05 sets the following statewide emissions targets: a reduction of greenhouse gas emissions to 2000 levels by 2010, a reduction of greenhouse gas emissions to 1990 levels by 2020, and a reduction of greenhouse gas emissions to 80 percent below 1990 levels by 2050. ARB estimates that California's annual emissions were equivalent to 427 Tg CO_2e in 1990, 463 Tg CO_2e in 2000, and 484 Tg CO_2e in 2006.[21]

Table 5.10-2 shows quantified California statewide emissions targets (AB 32 and Executive Order S-3-05 targets) based on the ARB's recently updated Inventory of Greenhouse Gases in California. Table 5.10-2 also indicates how these thresholds compare to future population projections by showing how the reduction thresholds would translate on a per capita basis as California's population increases. This is provided for informational purposes only; there is no adopted per capita goal for greenhouse gas reductions.

Predicted Effects of Climate Change

Climate change could have a number of adverse effects. Although these effects would have global consequences, in most cases they would not disproportionately affect any one site or activity. In other words, many of the effects of climate change are not site-specific. Emission of greenhouse gases would contribute to the changes in the global climate, which would in turn, have a number of physical environmental effects. A number of general effects, some of which might not affect the project area, are discussed below.

15 EPA, 2008. The U.S. Greenhouse Gas Emissions and Sinks: Fast Facts. Office of Atmospheric Programs.
16 CEC, 2007. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004.
17 CARB, 2009. California Greenhouse Gas Inventory for 2000-2006.
18 CEC, 2007. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004.
19 *Ibid.*
20 *Ibid.*
21 CARB, 2009. California Greenhouse Gas Inventory for 2000-2006.

TABLE 5.10-2

CALIFORNIA GREENHOUSE GAS REDUCTIONS TARGETS

Year[1]	Estimated California Population	Reduction Goal	Greenhouse Gas Target (Tg CO_2e)	Per Capita Target (metric tons CO_2e per person)[2]
1990	29,828,000	N/A	427.0	14.3
2000	34,105,437	N/A	463.2	13.6
2010	39,135,676	GHG emissions at or below 2000 levels[3]	463.2	11.8
2020	44,135,923	GHG emissions at or below 1990 levels	427.0	9.7
2050	59,507,876	GHG emissions 80% below 1990 levels[4]	85.4	1.4

Notes:
1. Target years specified in Executive Order S-3-05 and/or AB 32. 1990 and 2000 data are provided as a baseline.
2. Calculated by dividing the statewide greenhouse gas target by the projected population for each target year. 1 teragram (Tg) = 1 million metric tons = 1.1023 million short tons CO_2e.
3. Based on 2004 estimate.
4. Calculated by multiplying 427.0 x 80 percent.

Source: Population data are from California Department of Finance, 2007; greenhouse gas targets are derived from CARB, 2009. California Greenhouse Gas Inventory for 2000-2006.

Sea Level Rise and Flooding. The California Climate Change Center predicts that sea level in California will rise between 10.9 to 71.6 centimeters (cm) (0.36 to 2.3 feet) above existing mean sea level (msl) by 2099 as a result of climate change.[22] Measurements taken in the City of Alameda indicate that the current rate of sea level rise is about 0.29 feet per century.[23] Therefore, projected climate change effects on sea level would increase the existing rate of sea level rise by 0.07 to 1.94 feet per century. When combined with astronomical tides, even a 1-foot increase in msl would result in the 100-year event high tide peak occurring at the 10-year event frequency.[24] In other words, the frequency of a current 100-year high tide (about 9.5 feet above current msl) would occur 10 times more often when sea levels increase to 1 foot above current msl.

In the future, precipitation events are predicted to vary in terms of timing, intensity, and volume according to many climate change models.[25] Extreme storm events could occur with greater frequency.[26] The effect on peak runoff is not known because most climate change models have not used a temporal (or spatial) scale necessary to identify effects on peak flows, and existing precipitation/runoff models for assessing the effects of climate change do not yet adequately predict

22 Cayan, D., P. Bromirski, K. Hayhoe, M. Tyree, M. Dettinger, and R. Flick. 2006. Projecting Future Sea Level: Table 3 Projected global sea level rise (SLR) (cm) for the SRES A1fi, A2, and B1 greenhouse gas emission scenarios. SLR for A2 and B1 scenarios is estimated by combining output recent global climate change model simulations with MAGICC projections for the ice melt component. SLR estimates for A1fi estimated from MAGICC based on A2 temperature changes scaled according to those in A1fi. A Report from the California Climate Change Center CEC-500-2005-2002-SF. p. 19.

23 Floyd, M., M. Anderson, M. Roos, R. Peterson, M. Perrone, and D. Todd. 2006. Chapter 2: Potential Impacts of Climate Change on California's Water Resources, Table 2-6 Relative Sea Level Trends for Eight Tide Gauges Along the Coast of California with 50 Years or More of Record. p. 2-43. In Medelin, J., J. Harou, M. Olivares, J. Lund, R. Howitt, S. Tanaka, M. Jenkins, K. Madani, and T. Zhu (Eds), Climate Warming and Water Supply Management In California: White Paper. A Report from Climate Change Center CEC-500-2005-195-SF.

24 *Ibid.,* Figure 2.32.

25 EPA, 2008. Climate Change Science: Precipitation and Storm Changes. <www.epa.gov/climatechange/science/recentpsc.html>, (January 16, 2009).

26 *Ibid.*

rainfall/runoff scenarios.[27] Changes in rainfall and runoff could affect flows in surface water bodies, causing increased flooding and runoff to the storm drain system. The effect that future changes to the hydrologic cycle could have on the project area is speculative and is not addressed further in this document.

Water Supply. California Health and Safety Code Section 38501(a) recognizes that "[climate change] poses a serious threat to the economic well-being, public health, natural resources, and the environment of California," and notes, "the potential adverse impacts of [climate change] include…reduction in the quality and supply of water to the state from the Sierra snowpack." As most of the state depends on surface water supplies originating in the Sierra Nevada, this water supply reduction is a concern. Most of the scientific models addressing climate change show that the primary effect on California's climate would be a reduced snow pack and a shift in stream-flow seasonality. A higher percentage of the winter precipitation in the mountains would likely fall as rain rather than as snow in some locations, reducing the overall snowpack. Further, as temperatures rise, snowmelt, and thus peak runoff, is expected to occur earlier in the year. The end result of this would be that the State might not have sufficient surface storage to capture the resulting early runoff, and so, absent construction of additional water storage projects, a portion of the current supplies would be lost to the oceans, rather than be available for use in the State's water delivery systems.

Water Quality.[28] Climate change could have adverse effects on water quality, which would in turn affect the beneficial uses (habitat, water supply, etc.) of surface water bodies and groundwater. The changes in precipitation discussed above could result in increased sedimentation, higher concentration of pollutants, higher dissolved oxygen levels, increased temperatures, and an increase in the amount of runoff constituents reaching surface water bodies. Sea level rise, discussed above, could result in the encroachment of saline water into freshwater bodies.

Ecosystems and Biodiversity.[29] Climate change is expected to affect diverse types of ecosystems, from alpine to deep sea habitat. As temperatures and precipitation change, seasonal shifts in vegetation will occur, which could affect the distribution of associated flora and fauna species. As the range of species shifts, habitat fragmentation could occur, with acute impacts on the distribution of certain sensitive species. The IPCC states that "20 percent to 30 percent of species assessed may be at risk of extinction from climate change impacts within this century if global mean temperatures exceed 2 to 3°C (3.6 to 5.4°F) relative to pre-industrial levels."[30] Shifts in existing

27 Anderson. M. 2006. Chapter 6: Climate Change Impacts on Flood Management p. 6-22 and 6-27. In Medelin, J., J. Harou, M. Olivares, J. Lund, R. Howitt, S. Tanaka, M. Jenkins, K. Madani, and T. Zhu (Eds), Climate Warming and Water Supply Management In California: White Paper. A Report from Climate Change Center CEC-500-2005-195-SF.

28 IPCC, 2007: Climate Change 2007: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change [Parry, Martin L., Canziani, Osvaldo F., Palutikof, Jean P., van der Linden, Paul J., and Hanson, Clair E. (eds.)]. Cambridge University Press, Cambridge, United Kingdom, 1000 pp.

29 EPA, 2008. Climate Change – Ecosystems and Biodiversity. <www.epa.gov/climatechange/effects/eco.html>. (January 3, 2009).

30 IPCC, 2007: Climate Change 2007: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change [Parry, Martin L., Canziani, Osvaldo F., Palutikof, Jean P., van der Linden, Paul J., and Hanson, Clair E. (eds.)]. Cambridge University Press, Cambridge, United Kingdom, 1000 pp.

biomes could also make ecosystems vulnerable to invasive species encroachment. Wildfires, which are an important control mechanism in many ecosystems, could become more severe and more frequent, making it difficult for native plant species to repeatedly re-germinate. In general terms, climate change is expected to put a number of stressors on ecosystems, with potentially catastrophic effects on biodiversity.

Human Health Impacts.[31] Climate change could increase the risk of vector-borne infectious diseases, particularly those found in tropical areas and spread by insects—malaria, dengue fever, yellow fever, and encephalitis. Cholera, which is associated with algal blooms, could also increase. While these health impacts would largely affect tropical areas in other parts of the world, effects would also be felt in California. Warming of the atmosphere would be expected to increase smog and particulate pollution, which could adversely affect individuals with heart and respiratory problems, such as asthma. Extreme heat events would also be expected to occur with more frequency, and could adversely affect the elderly, children, and the homeless. Finally, the water supply impacts and seasonal temperature variations expected as a result of climate change could affect the viability of existing agricultural operations, making the food supply more vulnerable.

REGULATORY CONTEXT

Federal

There are no federal regulations that pertain to climate change.

State and Local

Executive Order S-3-05

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05, setting statewide targets for the reduction of California's greenhouse gas emissions. The Executive Order S-3-05 targets require that greenhouse gases be reduced to:

- 2000 levels by the year 2010,
- 1990 levels by the year 2020, and
- 80 percent below 1990 levels by the year 2050.

The text of Executive Order S-3-05 does not explain how the targets should be applied to individual development projects.

Executive Order S-3-05 also established the CAT for State agencies. After numerous public meetings and review of thousands of submitted comments, the CAT released its first report, *Climate Action Team Report to the Governor and the Legislature*, in March 2006, identifying key carbon reduction recommendations.

31 EPA, 2008. Climate Change – Health and Environmental Effects. <www.epa.gov/climatechange/effects/health.html#climate>, (January 3, 2009).

In April 2007, the CAT released a second report, *Proposed Early Actions to Mitigate Climate Change in California*, which identifies numerous strategies for initiation of other climate action regulations and efforts prior to the 2012 deadline for a phased statewide emission cap, as explained in further detail below as part of AB 32. State agencies are moving ahead on many of these Early Actions.

In October 2007, the CAT released the report, *Updated Macroeconomic Analysis of Climate Strategies*. This report updates the strategies presented in the 2006 CAT report.

Senate Bill 97

The provisions of Senate Bill (SB) 97, enacted in August 2007, direct the OPR to propose CEQA Guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." SB 97 directs OPR to develop such guidelines by July 2009, and directs the Resources Agency, the agency charged with adopting the CEQA Guidelines, to certify and adopt such guidelines by January 2010. Toward the end of 2009, the California Resources Agency adopted amendments to the State CEQA Guidelines for Greenhouse Gas Emissions (CEQA Guideline Amendments). The OPR technical advisory (see below), titled *CEQA and Climate Change*, released in July 2008, informs the analysis in this EIR.

CEQA Guideline Amendments for Greenhouse Gas Emissions. On December 30, 2009, the California Natural Resources Agency adopted revisions to the CEQA Guidelines addressing "the mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions, including, but not limited to, effects associated with transportation or energy sources." (See Pub. Resources Code, section 21083.05.) On February 16, 2010, the Office of Administrative Law filed the Amendments with the Secretary of State with the Amendments to become effective on March 18, 2010. Under CEQA Guidelines section 15007(b), public agencies need only comply with new CEQA Guidelines that "apply to steps in the CEQA process not yet undertaken by the date when agencies must comply with the amendments. That date, according to section 15007(d), is 120 days after the amendments are final. For these amendments, that date would be in mid June. Here, then, the Draft EIR is not required to comply with the new amendments. Even so, the City has done its best, based on the Guidelines as adopted by the Natural Resources Agency, to comply with provisions apparently applicable to draft EIRs.

Section 15064.4. Determining the Significance of Impacts from Greenhouse Gas Emissions. This section would be added to clarify a lead agency's responsibility in assessing greenhouse gas impacts. The text proposes general considerations that should be weighed when determining the significance of an effect:

- The extent to which the project could help or hinder attainment of State greenhouse gas targets, and its consistency with plans, programs, and regulations adopted for this purpose;
- The extent to which the project could increase the consumption of fuels or other energy resources, especially fossil fuels that contribute to greenhouse gas emissions when consumed;

- The extent to which the project could result in increased energy efficiency and a reduction in overall greenhouse gas emissions from an existing facility; and
- The extent to which the project impacts or emissions exceed any threshold of significance that applies to the project.

The CEQA Guideline Amendments require that lead agencies "describe, calculate or estimate the amount of greenhouse emissions associated with a project" but leave the choice of a preferred methodology to the lead agency's discretion. Qualitative or other performance-based standards may also be weighed.

Section 15126.4 Consideration and Discussion of Mitigation Measures Proposed to Minimize Significant Effects. The proposed text in this section states that lead agencies "should consider all feasible means of mitigating greenhouse gas emissions associated with the project's energy consumption." Project features and project design may qualify as mitigation. In addition, mitigation may include participation or compliance with a plan or mitigation program that would reduce greenhouse gas emissions. Carbon offsets may also be included as mitigation if part of a "reasonable plan of mitigation that the relevant agency commits itself to implementing."

Section 15130. Discussion of Cumulative Impacts. The proposed text in this section simply states that the project should be considered in the context of past, current, and foreseeable development to determine if a cumulatively considerable impact would result.

Proposed CEQA Checklist Questions. Appendix G of the CEQA Guidelines contains a sample checklist that may be used by lead agencies when considering environmental impacts. Two new checklist questions have been proposed for greenhouse gas emissions:

- Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?
- Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

OPR Technical Advisory, CEQA and Climate Change. On June 19, 2008, OPR published a technical advisory on CEQA and Climate Change, one in a series of advisories published by OPR as a service to professional planners, land use officials, and CEQA practitioners. The advisory provides OPR's perspective on the emerging role of CEQA in addressing climate change and greenhouse gas emissions, while recognizing that approaches and methodologies for calculating greenhouse gas emissions and addressing environmental impacts through CEQA review are rapidly evolving. The advisory recognizes that OPR will develop, and the Resources Agency will adopt, amendments to the CEQA Guidelines pursuant to SB 97. In the interim, the technical advisory "offers informal

guidance regarding the steps lead agencies should take to address climate change in their CEQA documents."[32]

The technical advisory points out that neither CEQA nor the CEQA Guidelines prescribe thresholds of significance or particular methodologies for performing an impact analysis. As stated, "[t]his is left to lead agency judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable."[33] OPR recommends that "the global nature of climate change warrants investigation of a statewide threshold of significance for GHG emissions."[34] Until such a standard is established, OPR advises that each lead agency should develop its own approach to performing an analysis for projects that generate greenhouse gas emissions.[35]

OPR sets out the following process for evaluating greenhouse gas emissions. First, agencies should determine whether greenhouse gas emissions could be generated by a proposed project, and if so, they should quantify or estimate the emission by type or source. Calculation, modeling or estimation of greenhouse gas emissions should include the emissions associated with vehicular traffic, energy consumption, water usage, and construction activities.[36]

Agencies should then assess whether the emissions are "cumulatively considerable" even though a project's greenhouse gas emissions might be individually limited. OPR states: "Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment."[37] Individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice.[38]

Finally, if the lead agency determines emissions are a cumulatively considerable contribution to a significant cumulative impact, the lead agency must investigate and implement ways to mitigate the emissions.[39] OPR states:

> Mitigation measures will vary with the type of project being contemplated, but include alternative project designs or locations that conserve energy and water, measures that reduce vehicle miles travelled (VMT) by fossil-fueled vehicles, measures that contribute to established regional or programmatic mitigation strategies, and measures that sequester carbon to offset the emissions from the project.[40]

OPR concludes that "[a] lead agency is not responsible for wholly eliminating all greenhouse gas emissions from a project; the CEQA standard is to mitigate to a level that is 'less than significant'."[41]

32 OPR, Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through CEQA Review, June 19, 2008, p. 2.
33 *Ibid.*, p. 4.
34 *Ibid.*
35 *Ibid.*, p. 5.
36 *Ibid.*
37 *Ibid.*, p. 6.
38 *Ibid.*
39 *Ibid.*
40 *Ibid.*, pp. 6-7.
41 *Ibid.*, p. 7.

The technical advisory includes a list of mitigation measures that can be applied on a project-by-project basis.

Assembly Bill 32

Shortly after the issuance of Executive Order S-3-05, the California State Legislature adopted AB 32, the Global Warming Solutions Act of 2006. AB 32 recognizes that California is the source of substantial amounts of greenhouse gas emissions. In the Findings and Declarations for AB 32, the Legislature found that:

> The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in 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 the marine ecosystems and that natural environment, and an increase in the incidences of infectious diseases, asthma and other health-related problems.

To avert these consequences, AB 32 requires ARB, the State agency charged with regulating statewide air quality, to create a plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases". AB 32 requires ARB to design and implement emissions limits, regulations, and other measures, such that statewide greenhouse gas emissions would be reduced to 1990 levels by 2020, the same 2020 threshold indicated in Executive Order S-3-05. AB 32 directed ARB to develop early actions to reduce greenhouse gas emissions while also preparing a Scoping Plan to identify how best to reach the 2020 limit. The measures and regulations to meet the 2020 target are to be in effect by 2012.

California Air Resources Board Climate Change Scoping Plan

ARB's *Climate Change Scoping Plan*, adopted on December 11, 2008, reports that ARB has met the first milestones set by AB 32. As discussed above, ARB was required to prepare a historical emissions inventory and set emissions targets for 2020. In December 2007, ARB approved a 1990 emissions inventory of 427 million metric tons of CO_2 equivalents of greenhouse gases. As AB 32 requires that emissions be reduced to 1990 levels by 2020, approval of this inventory effectively determined emissions targets for 2020. As required, ARB has also identified 44 early action measures that could be enforced on or before 2010. These measures include potential regulations affecting landfills, motor vehicle fuels, refrigerant in cars, port operations, and many other sources. Regulatory development for these measures is ongoing.

The Scoping Plan also proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, including:[42]

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewable energy mix of 33 percent;

42 CARB, December, 2008, Climate Change Scoping Plan, p. ES-3 to ES-4.

- 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.

The Scoping Plan notes that local governments are "essential partners" in the effort to reduce greenhouse gas emissions, and that they have "broad influence and, in some cases, exclusive jurisdiction" over activities that contribute to greenhouse gas emissions. The Scoping Plan encourages local governments to adopt goals for reducing municipal greenhouse gas emissions and move towards adoption of a goal for reducing community emissions. These targets should parallel the State's commitment to reduce greenhouse gas emissions by approximately 15 percent of current levels by 2020.[43] The Scoping Plan also observes that "[l]ocal governments have the ability to directly influence both the siting and design of new residential and commercial developments in a way that reduces greenhouse gases associated with vehicle travel, as well as energy, water, and waste,"[44] and that "[i]ncreasing low-carbon travel choices (public transit, carpooling, walking, and biking) combined with land use patterns and infrastructure that support these low-carbon modes of travel, can decrease average vehicle trip lengths by bringing more people closer to more destinations."[45] It also notes that regional targets will be set and achieved on a regional basis through the SB 375 implementation process, which "maintains regions' flexibility."

Senate Bill 375

SB 375, which establishes mechanisms for the development of regional targets for reducing passenger vehicle greenhouse gas emissions, was adopted by the State on September 30, 2008. SB 375 requires ARB to develop vehicular greenhouse gas emissions reduction targets for 2020 and 2035 by September 30, 2010 in consultation with metropolitan planning organizations. SB 375 recognizes the importance of achieving significant greenhouse gas reductions by changing land use patterns and improving transportation alternatives. Through the SB 375 process, regions will develop sustainable communities plans designed to integrate development patterns and the transportation network in a way that reduces greenhouse gas emissions while meeting housing needs and other regional planning objectives. No sustainable communities plans have been adopted; therefore, no such plan would apply to the project.

43 *Ibid.,* p. 27.
44 *Ibid.*, p. 26.
45 *Ibid.*, p. 48.

State Building Standards

California has achieved substantial energy savings and emissions reductions through implementation of aggressive building and appliance standards and utility energy efficiency programs. The ARB's Scoping Plan (see discussion of AB 32, above) reported:

> These combined efforts are saving more than 40,000 GWh of electricity annually—enough to power almost six million California homes. Due in part to these successful policies, California uses less electricity per person than any other state in the nation.[46]

However, in spite of these savings, the Scoping Plan notes that "[c]ollectively, energy use and related activities by buildings are the second largest contributor to California's greenhouse gas emissions."[47]

Title 24, Part 6, of the California Code of Regulations (CCR), Energy Efficient Standards for Residential and Nonresidential Buildings (also referred to as the California Energy Code), was adopted in 1978 by the California Energy Commission (CEC) in response to a legislative mandate to reduce California's energy consumption. Title 24, Part 6 is updated frequently, with the most recent update occurring in 2008. Title 24, Part 6 requires the incorporation of energy conserving features in new construction, and alterations and additions to existing buildings. Although it was not originally intended as a climate change measure, by reducing California's energy consumption, Title 24, Part 6, has become a means of reducing California's greenhouse gas emissions. Energy efficient buildings require less electricity, which results in fewer greenhouse gas emissions.

On July 17, 2008, the California Building Standards Commission (CBSC) adopted the California Green Building Code, which is being codified in Title 24, Part 11, of the CCR. As the ARB's Scoping Plan explains, "[w]hile the current version of the commercial green building code is voluntary, the CBSC anticipates adopting a mandatory code in 2011, which will institute minimum environmental performance standards for all occupancies."[48]

San Joaquin Valley Air Pollution Control District

In August 2008, the Governing Board of SJVAPCD approved the district's climate change action plan (CCAP). As part of this plan, SJVAPCD was authorized to pursue the preparation of impact assessment guidance for the purposes of CEQA-compliance documentation. In addition, the CCAP authorized SJVAPCD to develop carbon-banking regulations, improve the existing criteria pollutant emissions inventory reporting system, and to administer GHG emission reduction agreements for new projects.

Then, in November 2009, SJVAPCD released its Final Draft Staff Report for Addressing GHG Emissions Impacts Under CEQA. Within these guidelines, SJVAPCD recommends the assessment of environmental impacts based on the following tiered approach:

46 *Ibid.*, Appendix C, p. C-90.
47 *Ibid.*, p. 57.
48 *Ibid.*, p. 57.

- *Project exempt from CEQA* – No significant impacts with respect to GHG emissions;
- *Project complies with applicable plan for reduction of GHG emissions* – No significant impacts with respect to GHG emissions;
- *Project achieves SJVAPCD GHG emission reduction targets through the use of SJVAPCD Best Performance Standards (BPS)* – No significant impacts with respect to GHG emissions;
- *Project achieves SJVAPCD GHG emission reduction targets through the use of BPS and additional mitigation* – No significant impacts with respect to GHG emissions; and,
- *Project does not achieve SJVAPCD GHG emission reduction targets even with inclusion of BPS and all other feasible mitigation* – The GHG emissions impact associated with the project would be considered significant and unavoidable.

The current GHG reduction target established by SJVAPCD is 29 percent, consistent with the goals established in ARB's Climate Change Scoping Plan.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

The analysis in this section focuses on the nature and magnitude of the change in GHG emissions due to implementation of the proposed project. GHG emissions associated with the proposed project would result primarily from energy use in project buildings and project-related traffic. Construction activities would also generate emissions at the project site and on roadways. The net increase in GHG emissions generated by operation of the proposed project has been quantitatively estimated and compared against SJVAPCD guidance/thresholds. Impacts associated with construction emissions are quantified but qualitatively analyzed.

As stated in the Air Quality section of this Draft EIR (see Section 5.3), operational emissions associated with the proposed project have been estimated using a combination of the URBEMIS 2007 computer model developed for the ARB, California Climate Action Registry protocol, and the information provided in Chapter 3 (Project Description) and trip generation rates from the project traffic study (see Appendix G).

Standards of Significance

For the purposes of this analysis, the following thresholds will be considered to analyze the effects of a project on the production of GHGs and contribution to global climate change:

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

Due to the nature of assessment of greenhouse gas emissions and the effects of global climate change, impacts can currently only be analyzed from a cumulative context. Therefore, the analysis provided above includes the analysis of both the project and cumulative impacts.

Impacts and Mitigation Measures

5.10-1 The proposed project would contribute to greenhouse gas emissions.

Construction

As noted in Section 5.3, Air Quality, the proposed project would result in air emissions, including GHG emissions, as a result of the operation of heavy construction equipment and worker commute trips to and from the project site and building supply vendor vehicles. Because the specific size, location, and construction techniques and scheduling that would be used for development occurring within the project site is not currently known, precise emission estimates for construction cannot be made at this time. However, Table 5.10-3 presents estimated CO_2 emissions levels consistent with the air quality modeling done for the proposed project and summarized in Section 5.3 of this EIR.

TABLE 5.10-3

ESTIMATED CO_2 EMISSIONS DURING CONSTRUCTION OF THE PROPOSED PROJECT

Year of Construction	Estimated CO_2 Emissions (metric tons CO_2)
Year 2010 (Phase 1)	642
Year 2011 (Phase 1)	13,140
Year 2012 (Phases 1 and 2)	7,636
Year 2013 (Phases 2, 3, and 4)	1,605
Year 2014 (Phases 3 and 4)	3,457
Year 2015 (Phases 3 and 4)	6,120
Year 2016 (Phases 3 and 4)	6,121
Year 2017 (Phases 3 and 4)	6,099
Year 2018 (Phases 3 and 4)	6,122
Year 2019 (Phases 3 and 4)	6,123
Year 2020 (Phase 5)	2,854
Year 2021 (Phase 5	6,713
Year 2022 (Phase 5)	6,687
Total CO_2 Emissions	73,319

Source: URBEMIS 2007 v.9.2.4; PBS&J 2009.

As shown in this table, the construction of residential, industrial, office, and commercial uses under the proposed project would result in additional greenhouse gas emissions, which could represent a substantial contribution to greenhouse gas emissions in California, and as such, this impact is considered ***potentially significant***.

Mitigation Measures

The CCAT has recommended strategies, some of which apply to construction activities, to reduce GHG emissions at a statewide level to meet the goals of the executive order. In addition, the 2008 CAPCOA report, *CEQA and Climate Change*, includes numerous greenhouse-gas reducing

measures. Further, the California Attorney General's Office has also published a list of recommendations of greenhouse gas reducing measures.

Table 5.10-4 includes greenhouse gas emission strategies recommended by the CCAT and the California Attorney General along with project-specific mitigation measures that would ensure consistency with CCAT.

TABLE 5.10-4

GREENHOUSE GAS EMISSION REDUCTION MEASURES INCORPORATED DURING PROJECT CONSTRUCTION

Greenhouse Gas Emissions Reduction Strategies	Proposed Project Mitigation Measure for Compliance
CAPCOA MM C-1: ARB-Certified Diesel Construction Equipment	Mitigation measure 5.10-1(a), below, requires the use of diesel-powered equipment that has been retrofitted with after-treatment products (e.g., engine catalysts and other technologies available at the time construction commences) to the extent that they are readily available, consistent with CAPCOA MM C-1.
CAPCOA MM C-2: Alternative Fuel Construction Equipment	Mitigation measure 5.10-1(b) requires that the use of alternative fuel construction equipment to the extent feasible, consistent with CAPCOA MM C-2.
CAPCOA MM C-3: Local Building Materials	Mitigation measure 5.10-1(c) requires the use of locally-available building materials, consistent with MM C-3.
CAPCOA MM C-4: Recycle Demolished Construction Material	Mitigation measure 5.10-1(d) requires the diversion of up to 50 percent of construction, demolition, and site clearing waste, consistent with CAPCOA MM C-4.
CCAT Standard Diesel Anti-idling: In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling. Post signs that restrict idling; education for truck drivers regarding diesel health impacts.	Any project, including the proposed project, that occurs within the jurisdiction of the SJVAPCD must comply with the requirements of Rule 9510 (Indirect Source Review), which includes specific measures related to construction equipment, such as regular maintenance of construction equipment, limitations on idling of equipment, and watering of the site. Further, mitigation measure 5.3-1(a) requires that vehicles be shut off when not in use.
California Attorney General Strategy Diesel Anti-Idling: Set specific limits on idling time for commercial vehicles, including delivery vehicles.	See discussion of CCAT Standard regarding diesel anti-idling above.
California Attorney General Strategy Solid Waste Reduction Strategy: Project construction shall require reuse and recycling of construction and demolition waste.	See discussion of CAPCOA MM C-4 above.
Source: PBS&J 2009.	

CO_2e emissions associated with the duration of project construction over the buildout period would contribute to the regional greenhouses gas inventory. Upon project buildout, greenhouse gas emissions associated with project construction would cease. The mitigation measures listed below would reduce emissions of CO_2 from construction equipment.

Incorporation of Mitigation Measure 5.10-1, below, would reduce emissions of greenhouse gases during construction and would also reduce energy consumption and greenhouse gas emissions during project operation.

5.10-1 *The Project shall prepare and implement GHG emissions reduction plans for all areas to be developed within the Project site, and shall implement all feasible construction-related and long-term GHG emission reduction strategies.*

For each tentative small lot subdivision map application or grading permit application for areas of the project site to be developed without further subdivision, the Project applicant shall prepare and submit to the City a GHG reduction plan. Each GHG emissions reduction plan shall identify all feasible measures to reduce construction-related and long-term GHG emissions associated with development and land uses within the subject area and shall demonstrate compliance with applicable state and local greenhouse gas emission reduction regulations in effect at the time of each tentative small-lot map or grading plan application. Prior to the City's approval of each tentative small-lot map or grading plan, the City shall review and approve the GHG emissions reduction plan, verify that the plan achieves all feasible GHG emission reduction strategies and shall require that the Project implement all feasible strategies identified in the plan.

Construction-related GHG emission reduction measures to be considered for feasibility and incorporation to the GHG emissions reduction plan shall include, but not be limited to, the following:

a) *Retrofit diesel-powered equipment with after-treatment products (e.g., engine catalysts and other technologies available at the time construction commences) to the extent that they are readily available and cost effective when construction activities commence.*

b) *Use alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline) to the extent feasible at the time construction activities commence.*

c) *Use locally-available building materials, such as concrete, stucco, and interior finishes, for construction of the project and associated infrastructure to the extent feasible.*

d) *Establish a construction management plan with the local waste haulers to divert a target of 50 percent of construction, demolition, and site clearing waste.*

According to the guidance in CEQA Guidelines section 15064.4, a project may be considered to help attainment of the State's goals (AB 32) by being consistent with the plans, programs, and regulations adopted to implement AB 32. Further, a lead agency may rely on qualitative or other performance-based standards for estimating the significance of greenhouse gas emissions. Therefore, since the project includes measures (5.10-1 [a] through [d]) that are consistent with strategies recommended by the CCAT, CAPCOA, and the California Attorney General, the project's contribution to greenhouse gas emissions during project construction would be ***less than significant***.

Operation

The proposed project would also generate greenhouse gases through the operation of new residential, industrial, commercial, and office uses. Operational greenhouse gas emissions from the project would include direct sources such as motor vehicles, natural gas consumption, and solid waste handling/treatment, and indirect sources such as electricity generation. To assess the operational GHG impacts of the project, this analysis relies heavily on the November 2009 guidance prepared by SJVAPCD. Per SJVAPCD's November 2009 guidance, a project must establish a 29 percent reduction from business as usual (BAU) conditions in 2020 through the implementation of BPS or other mitigation to be considered less than significant.

Motor Vehicle GHG Emissions

The largest source of GHG emissions associated with the proposed project would be on- and off-site motor vehicle use. CO_2 emissions, the primary greenhouse gas from mobile sources, are directly related to the quantity of fuel consumed. Two important determinants of transportation-related GHG emissions are VMT and vehicle fuel efficiency. VMT in the California region has steadily increased over the last quarter-century.

While gross incremental global warming impacts related to vehicle or energy usage associated with a project can be quantified, the resulting calculations exhibit an overcounting of emissions because they do not take into account the fact that these emissions are not "new" in a global sense, even if they are newly attributable to a particular project. For example, to determine the increment of change in GHG emissions that is a result of a proposed project's vehicle trips, it would not be sufficient or accurate simply to quantify GHG emissions based on vehicle miles traveled, unless those vehicle miles can be compared to the vehicle miles that are already being traveled by persons who may move to an area that is proposed to be developed. There is not yet any methodology for determining the increment of change that should be attributed to a project, which might result in some drivers relocating from other areas. Further, these calculations are "worst case" in that they do not take into account anticipated regulatory changes in vehicle efficiency standards which will reduce per vehicle GHG emissions over time.

Electricity Use

Fuels that generate greenhouse gas emissions are combusted to produce electricity. Therefore, all projects that would result in an increase in electricity consumption also result in an indirect increase in electricity emissions. The generation of electricity through the combustion of fossil fuels typically yields CO_2 and, to a much smaller extent, CH_4 and N_2O. The project-related electricity emissions were estimated by applying emission factors to the estimated electricity use.

Natural Gas Use

The project would generate direct emissions from on-site sources such as natural gas usage. Emissions from direct, on-site sources were calculated using California Climate Action Registry Protocol and natural gas usage factors from the Energy Information Administration for the proposed land uses.

Solid Waste

Solid waste generated by the project would also contribute to greenhouse gas emissions. Treatment and disposal of municipal, industrial, and other solid waste produces significant amounts of CH_4. In addition to CH_4, solid waste disposal sites produce biogenic CO_2 and non-methane volatile organic compounds (NMVOCs) as well as smaller amounts of N_2O, nitrogen oxides (NO_X), and carbon monoxide (CO). CH_4 produced at solid waste sites contributes approximately 3 to 4 percent to the annual global anthropogenic greenhouse gas emissions.[49]

Greenhouse gas emissions from solid waste generated by the project were estimated based on formulas provided in the *State Workbook: Methodologies for Estimating Greenhouse Gas Emissions*, which provides generation factors of greenhouse gases from degradation and outgassing of landfill material. Landfill gas is approximately 50 percent CH_4 and 50 percent CO_2. According to the Workbook, N_2O emissions from landfills are considered negligible. At 2030, estimated annual emissions of greenhouse gases from solid waste generated by the project would be 2,091 metric tons CO_2e per year.[50] It is important to note that this estimate is conservative and does not include any reductions from waste minimization practices and recycling/reuse policies that are commonly employed to reduce solid waste. Also, landfill gas recovery has become more common as a measure to reduce CH_4 emissions from solid waste disposal sites.

Water-Related Emissions

Greenhouse gas emissions would be generated by the infrastructure used to distribute and treat the domestic water that would supply the proposed project. In addition, emissions would be generated during the treatment of wastewater generated by the project. In general and according to the Inventory of California Greenhouse Gas Emissions and Sinks, water supply emissions represent only 0.04 percent of total statewide emissions.[51] Wastewater treatment emissions represent only 0.6 percent of total statewide emissions.[52]

Other Greenhouse Gas Emissions

Ozone is a greenhouse gas; however, unlike the other greenhouse gases, ozone in the troposphere is relatively short-lived and therefore is not global in nature. Further, according to the ARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NO_x and ROGs) to global warming.[53] Therefore, it is assumed that project emissions of ozone precursors would not significantly contribute to global climate change. At present, there is a federal ban on CFCs; therefore, it is assumed the project would not generate emissions of these greenhouse gases. The project may emit a small amount of HFC emissions from leakage and service of refrigeration and air conditioning equipment and from disposal at the end of the life of the equipment. However, the

49 IPCC, 2006. *Guidelines for National Greenhouse Gas Inventories*.
50 Based upon the methodologies of the U.S. EPA's State and Local Reach Program State Workbook, Methodologies for Estimating Greenhouse Gas Emissions (January 1995).
51 California Energy Commission, 2006. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. Staff Final Report.
52 *Ibid.*
53 California Air Resources Board. 2004. Fact Sheet, Climate Change Emission Control Regulations.

details regarding refrigerants to be used in the project and the capacity of these are unknown at this time.

Comparison of BAU and Project Emissions

Business As Usual (2020) Conditions

Using a combination of URBEMIS 2007 and CCAR Protocol, as noted above, the potential operational GHG emissions of a similar development under BAU conditions were calculated. The results and assumptions of this modeling are shown in Table 5.10-5. For further clarification and the modeling worksheets/outputs, refer to Appendix H.

TABLE 5.10-5

PROPOSED PROJECT BUSINESS AS USUAL EMISSIONS

Year/Emission Source	CO_2e (metric tons/year)
Vehicular Use[a]	111,303
Electricity Use	49,518
Natural Gas Use	21,103
Solid Waste	17,213
Water Distribution/Treatment	1,644
Total BAU Operational CO_2e Emissions	**200,780**

Notes:
1. The land uses from Chapter 2.0 and the trip capture/pass-by rates use for the traffic analysis that were used for the proposed project were included as part of the BAU analysis.
2. URBEMIS defaults for trip lengths per land use type were used.
3. Utility usage factors are based on U.S. Energy Information Administration factors.

Source: PBS&J, 2009. Based on URBEMIS 2007 Version 9.2.4 and California Climate Action Registry Protocol v. 3.1.
Assumptions:

Project Conditions

Under the proposed project, there are several design measures that would reduce potential GHG emissions associated with the operation of uses. These include:

- Pedestrian facilities throughout the project site and connecting different types of uses;
- An average density of 7-10 dwelling units per acre in areas of residential development;
- A mix of uses, including residential, within ¼ mile of each other; and,
- The location of residential uses within ¼ mile of parks and/or public open space.

The components listed above would result in an approximately 5.5 percent reduction in GHG emissions compared to BAU conditions, resulting in approximately 189,737 metric tons of CO_2e attributable to the operation of on-site uses on an annual basis. As 5.5 percent would be less than the targeted reduction of 29 percent by SJVAPCD, this impact would be considered *potentially significant*.

Mitigation Measure 5.3-2 (a) in Section 5.3, Air Quality, requires development to exceed 2008 Title 24 standards, which would reduce GHG emissions associated with energy consumption. Further, the following mitigation measures would be implemented to reduce operational GHG emissions.

5.10-1 e) *Implement Mitigation Measure 5.3-2(a).*

f) *Operational GHG emission reduction measures shall also be included in GHG reduction plans to be developed in conformance with Mitigation Measure 5.10-1(a) - (d). Measures to be considered for feasibility and incorporation in the GHG emissions reduction plan shall include, but not be limited to:*

1. *Include electric vehicle charging facilities at parking areas of all new homes.*
2. *Provide the minimal amount of car parking required and increase the amount of bike storage and parking areas at multi-family residential and non-residential projects.*
3. *Payment of transportation impact fees to fund public transit service.*
4. *Orient lot configurations to provide convenient access to transportation options.*
5. *Include energy efficient designs and materials for buildings, appliances, lighting and office equipment.*
6. *Incorporate use of solar panels, water reuse systems, and composting and on-site renewable energy production when feasible.*
7. *Include low-emitting furnaces in all residential, commercial, and mixed-use buildings within the Project.*
8. *Include skylights in structures to reduce the need for general area lighting on sunny days.*
9. *Participate in local-area recycling programs through provision of convenient recycling bins and separation facilities.*
10. *Incorporate landscape designs that reduce energy and water consumption, such as planting drought resistant native trees that increase area-wide shade and xeriscaping.*
11. *Prohibit requirements that front and side yards of single family homes be planted with turf grass, and permit and encourage bunch grass and low-water landscaping.*
12. *Install Energy Star labeled roof materials in all occupied or other conditioned structures.*
13. *Provide optimized thermal distribution in all occupied and other conditioned structures by separating ventilation and thermal conditioning systems.*
14. *Provide solar water heaters for all occupied and other conditioned structures.*

15. *Provide energy efficient appliances (e.g., Energy Star) in all residential units and commercial structures.*
16. *Equip all occupied and conditioned structures with energy-reducing programmable thermostats that automatically adjust temperature settings.*
17. *Equip all occupied and conditioned structures with low-water use appliances.*

Mitigation Measure 5.3-2(a) would reduce emissions by another 1.0 percent, and Mitigation Measure 5.10-1(f) would reduce CO_2e emissions associated with operation of the proposed project even further. However, the degree to which emissions would be reduced cannot be quantified at this initial stage of project design. Based on initial evaluation of the components and design of the project, GHG emissions associated with the proposed project would be reduced by approximately 6.5 percent from BAU conditions, which does not achieve the SJVAPCD target of 29 percent. As the project is in the initial stages of planning, additional GHG-reducing measures could be incorporated and will be part of the greenhouse gas emission reduction plans (Mitigation Measure 5.10-1); however, establishing the feasibility of such measures, as well as whether such measures could achieve SJVAPCD's 29 percent reduction target, is not possible at this time. As a result, impacts are considered ***significant and unavoidable***.

6. ALTERNATIVES

6.0 ALTERNATIVES

INTRODUCTION

The purpose of this chapter is to identify and describe alternatives to the proposed project. Project alternatives are developed to reduce or eliminate the significant or potentially significant adverse environmental effects identified as a result of the proposed project, while still meeting most if not all of the basic project objectives.

California Environmental Quality Act Requirements

An EIR must evaluate a reasonable range of alternatives to the proposed project or to the location of the proposed project that could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives (CEQA Guidelines, section 15126.6). An EIR need not evaluate the environmental effects of alternatives in the same level of detail as the proposed project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project. CEQA provides the following guidelines for discussing alternatives to a proposed project:

> The specific alternative of the "no project" shall also be evaluated along with its impacts....If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. (CEQA Guidelines, section 15126.6, subd.(e)(2).)
>
> The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the proposed objectives, or would be more costly. (CEQA Guidelines, section 15126.6, subd.(b).)
>
> If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. (CEQA Guidelines, section 15126.6, subd.(d).)
>
> The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice....The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making....An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative. (CEQA Guidelines, section 15126.6 subd.(f).)

The requirement that an EIR evaluate alternatives to the proposed project or alternatives that address the location of the proposed project is a broad one; the primary intent of the alternatives analysis is to disclose other ways that the objectives of the project could be attained while reducing the magnitude of, or avoiding, the environmental impacts of the proposed project. Alternatives that are included and evaluated in the EIR must be feasible alternatives. However, the Public Resources Code and the CEQA Guidelines direct that the EIR need "set forth only those alternatives necessary

to permit a reasoned choice." The CEQA Guidelines provide a definition for "a range of reasonable alternatives" and, thus, limit the number and type of alternatives that need to be evaluated in a given EIR. According to the CEQA Guidelines (Section 15126.6(b)):

> The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project.

First and foremost, alternatives in an EIR must be feasible. In the context of CEQA, "feasible" is defined as:

> …capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors.

Further, the following factors may be taken into consideration in the assessment of the feasibility of alternatives: site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and the ability of the proponent to attain site control. (Section 15126.6(f)(1).) Finally, an EIR is not required to analyze alternatives when the effects of the alternative "cannot be reasonably ascertained and whose implementation is remote and speculative." (Section 15126.6(f)(3).)

The selection of alternatives takes into account the project objectives provided in Chapter 2 (Project Description). The project objectives include:

1. Provide a diversity of employment and housing types and opportunities.
2. Provide a pedestrian oriented neighborhood compatible with the Austin Road Business Park and Planned Community site, with pedestrian features that include safe, comfortable sidewalks and relatively direct routes to schools, parks, and commercial services.
3. Provide access to neighborhood parks.
4. Create a distinctive neighborhood identity through street landscaping, gateways, and traffic circles.
5. Provide opportunities for retail, commercial, industrial, and professional uses that contribute to the economic base of the City of Manteca.
6. Provide a major employment center identified in the 2023 General Plan that could reduce the home-to-work commute by Manteca residents.

Equally important to attaining the project objectives is the reduction of some or all significant impacts, particularly those that could not be mitigated to a level below the threshold of significance. The project-specific and cumulative significant and unavoidable impacts of the proposed project, after mitigation, are shown below.

Project-Specific Significant and Unavoidable Impacts

5.1-3 The proposed project could substantially degrade the existing visual character or quality of the site and its surroundings.

5.2-1 The proposed project could convert Important Farmland (Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance) as defined in the California Department of Conservation Farmland Mapping and Monitoring Program to non-agricultural use.

5.2-2 The proposed project could conflict with existing zoning for agricultural use or with a Williamson Act contract.

5.3-1 Construction activities could generate substantial concentrations of criteria air pollutants, including fugitive dust.

5.3-2 Operation of the proposed project would generate emissions that may exceed SJVAPCD thresholds for ROG, NO_x and PM_{10}.

5.3-3 Uses developed within the proposed project could expose sensitive receptors to project-generated toxic air emissions.

5.6-2 Operation of land uses associated with the proposed project could result in a substantial increase in local traffic noise levels over existing and future noise levels without the project.

5.6-4 Construction of the proposed project could result in the exposure of sensitive receptors to excessive vibration levels.

5.6-6 Implementation of the proposed project could result in the exposure of sensitive land uses to excessive noise levels associated with the continued operation of the UPRR rail line.

5.9-1 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the four intersections around the Austin Road/SR 99 interchange.

5.9-2 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels at the Main Street/Eastbound SR 120 Ramps signalized intersection.

5.9-3 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Main Street/Atherton Drive intersection.

5.9-7 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Austin Road/Ripon Road intersection.

5.9-8 The proposed project would cause an increase in traffic which would degrade or exacerbate unacceptable LOS on 13 freeway mainline segments near the project.

5.9-9 The proposed project would cause an increase in traffic which would degrade or exacerbate unacceptable operations at freeway merge, diverge, and weaving areas near the project.

5.9-13 The proposed project would generate new travel across at-grade railroad crossings.

Cumulative Significant and Unavoidable Impacts

Aesthetics

Because the project proposes land uses that could develop large scale structures, the project would contribute to a substantial change in visual character from agricultural to developed. The proposed project would contribute to the cumulative increase in ambient light that would exist in combination with other development, and add new light sources and glare that could create hazards.

Agricultural Resources

The project would contribute to the trend of land conversion from agricultural uses to urban and other non-agricultural uses (including wildlife habitat enhancement) in the Central Valley.

Air Quality

The proposed project would make a cumulatively considerable contribution during construction with regard to SJVAPCD-identified criteria pollutants. The proposed project's contribution to ROG and NO_x criteria pollutant emissions would be cumulatively considerable. Project-generated toxic air emissions would contribute to potential health risks.

Cultural Resources

The proposed project has the potential to adversely affect significant archaeological resources and human remains that are unique and non-renewable members of finite classes.

Noise

The contribution of the proposed project to future roadway noise levels would exceed the identified thresholds of significance.

Vibration from future development could potentially combine with construction vibration of the proposed project to exceed thresholds for vibration.

Transportation and Circulation

The proposed project would cause an increase in traffic which would degrade the signalized intersection operations to unacceptable levels at the Main Street/SR 120 Ramp terminal intersections.

The proposed project would exacerbate unacceptable operations at the Main Street/Atherton Drive intersection.

The proposed project exacerbates unacceptable operations at the Main Street/Woodward Avenue intersection.

The proposed project would exacerbate unacceptable operations at the four intersections around the Austin Road/SR 99 interchange.

The proposed project would exacerbate unacceptable operations at the Austin Road/Ripon Road intersection.

The proposed project would exacerbate unacceptable freeway mainline operations on all 16 freeway mainline segments near the project.

The proposed project would cause an increase in traffic which would exacerbate unacceptable operations at freeway merge, diverge, and weaving areas near the project.

Global Climate Change

The construction of residential, industrial, office, and commercial uses under the proposed project would result in additional greenhouse gas emissions, which could represent a substantial contribution to greenhouse gas emissions in California.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

Consistent with CEQA, primary consideration was given to alternatives that would reduce significant impacts while still meeting most of the project objectives. Those alternatives that would have impacts identical to or more severe than the proposed project, or that would not meet most of the project objectives, were rejected from further consideration.

The project site is located adjacent to SR 99, which is currently in the planning process by Caltrans for a new interchange to replace the existing Austin Road interchange and provide improved access to the City. The site is currently envisioned in the City's General Plan to include industrial and commercial uses adjacent to the highway to take advantage of this improved access. As discussed below, the General Plan land use designations requested under the proposed project are similar to those under the existing General Plan. Based upon a review of lands within the City, there are no other sites of sufficient size and similar access that could accommodate all of the uses proposed under the proposed project. While the uses proposed under the project could be accommodated on a number of sites throughout the City, the ability of the applicant for the proposed project to obtain control of several sites to develop what would be, in sum, equivalent to the proposed project, would be infeasible. Consequently, an off-site alternative is not considered in this EIR.

As discussed below, the most notable impact associated with the project is related to the capacity of the existing Austin Road interchange at SR 99 and traffic impacts that would occur until such time a

new interchange is constructed. Therefore, the level of development that could occur without triggering significant traffic impacts and requiring the construction of a new interchange was used as the basis for a reduced intensity alternative. Because any project beyond that level of development would result in the need for a new interchange or result in significant traffic impacts, no other reduced intensity alternative is considered.

ALTERNATIVES CONSIDERED IN THIS EIR

The following alternatives include scenarios intended to reduce the severity of impacts associated with implementation of the proposed project. Impacts that would result from the proposed project include those generally related to the physical area being impacted, or footprint impacts, and those related to the intensity of the project. Significant footprint impacts that would result from the proposed project are related to the conversion of Important Farmland to non-agricultural uses. Footprint impacts can be reduced by reducing the physical area of the project. Any reduction in footprint for the proposed project would generally result in a corresponding reduction in the footprint-related impacts of the project (i.e., a 50 percent reduction in footprint would result in approximately half the loss of Important Farmland).

A reduced footprint alternative could include scenarios where the density is increased to result in the same amount of development on a smaller site or with a reduction in the intensity of the project commensurate with the reduction in the footprint. Because thresholds for impacts on agricultural resources are not clearly enumerated, one can show a clear reduction in the magnitude of impacts by reducing the footprint to 50 percent, but one cannot reach a clear conclusion that impacts are reduced to less than significant because a substantial amount of agricultural land would still be converted to non-agricultural use. Thus, without a clear demarcation of significance, the determination of the project reduction can be arbitrary. However, one method in determining the size of a reduced footprint alternative is to base the reduction on development intensity-related impacts and adjust the physical size accordingly.

Intensity-related impacts for the proposed project are generally due to automobile trips, including traffic congestion, air quality effects from emissions of pollutants, and automobile noise. Although any number of alternatives could be designed that could result in the reduction of intensity-related project impacts, development of the project site is constrained by the capacity of the existing Austin Road interchange at SR 99. As discussed in Section 5.9, Transportation and Circulation, with some modifications to the existing interchange and some minor road and intersection improvements, only about 10 percent of the project could be developed before there would be significant impacts on SR 99 and local roads. Any alternative that exceeds this amount of development (determined by traffic modeling to be the amount of development that would generate up to 919 PM peak hour trips) would either result in significant and unavoidable traffic impacts or require the construction of a new interchange to replace the existing Austin Road interchange. Thus, an alternative that assumes development equivalent to approximately 10 percent of the development in the proposed project on approximately 10 percent of the project site is evaluated in this EIR.

A No Project/No Development Alternative and a No Project/Existing General Plan Alternative are also evaluated in this Draft EIR. Following is a description of the project alternatives.

- **No Project/No Development Alternative:** This alternative assumes that the proposed project would not occur and there would be no development of the site. This alternative assumes any existing agricultural operations that have historically occurred on the site would remain.
- **No Project/Existing General Plan Alternative:** This alternative assumes that the proposed project would not be developed, but the site would be developed as currently designated in the City of Manteca General Plan. The Manteca General Plan designates the project site as Low Density Residential (LDR; 318.8 acres), Medium Density Residential (MDR; 48.6 acres), High Density Residential (HDR; 40.5 acres), General Commercial (GC; 96.1 acres), Heavy Industrial (HI; 519.7 acres), and Park (P; 6.7 acres).
- **Reduced Footprint/10 Percent Development Alternative:** This alternative assumes development of the equivalent of approximately 10 percent of the proposed project would be developed on 10 percent of the project or approximately 105 acres.

Each of the alternatives is described in more detail and analyzed below. For each subject area, Table 6-1 indicates whether the impacts of the project alternatives are more or less severe than those of the proposed project. As required under section 15126.6(e) of the State CEQA Guidelines, a discussion of the environmentally superior alternative appears at the end of this chapter.

TABLE 6-1

ALTERNATIVE IMPACT DISCUSSION

Issue Area	Proposed Project[1]	No Project/ No Development	No Project/ Existing GP	Reduced Footprint/ 10 Percent Development
Aesthetics	SU	Reduced	Equal	Reduced
Agricultural Resources	SU	Reduced	Equal	Reduced
Air Quality	SU	Reduced	Reduced	Reduced
Biological Resources	LS	Reduced	Equal	Reduced
Cultural Resources	SU	Reduced	Equal	Reduced
Noise	SU	Reduced	Reduced	Reduced
Public Services	LS	Reduced	Reduced	Reduced
Public Utilities	LS	Reduced	Equal	Reduced
Transportation and Circulation	SU	Reduced	Reduced	Reduced
Climate Change	SU	Reduced	Reduced	Reduced

Notes:
1. Impact significance based on project-level impacts, except for Climate Change, which is based upon the cumulative impact.
SU = Significant and Unavoidable – if any impact was identified as significant and unavoidable in the technical analysis.
LS =Less than Significant – if all impacts were identified as less than significant in the technical analysis.
NI = No impact would occur when compared to the proposed project.
Equal = Level of significance is equal or similar to the proposed project.
Greater = Level of significance is greater than the proposed project.
Reduced = Level of significance is reduced compared to the proposed project, but not necessarily to a less-than-significant level.
Source: PBS&J, 2009.

No Project/No Development

Description

CEQA requires the evaluation of the comparative impacts of the "No Project" alternative. (CEQA Guidelines Section 15126.6(e)(1)). The No Project/No Development Alternative describes an alternative in which no development would occur on the project site and the uses on the site would remain the same as under existing conditions. Under the No Project/No Development Alternative, the project site would likely continue to be used for agricultural production and open space. The site-specific impacts of the No Project/No Development alternative are best described by the existing conditions presented in the environmental setting sections of Chapter 5 of this Draft EIR.

Comparative Environmental Effects

The No Project/No Development alternative would produce no changes on the project site, effectively eliminating those project impacts discussed in this EIR. Because the site would remain in its current condition, there would be no environmental impacts associated with introducing buildings and people into an area that is currently only minimally developed.

Under the No Project/No Development Alternative, no light sources would be created and there would be no change to the existing visual character of the project site. The loss of productive agricultural land would not occur. There would be no increase in air pollutants associated with project construction nor an increase in pollutants associated with more vehicles accessing the area. There would be no impacts on biological resources without development of the project. In addition, the potential disturbance to any unknown subsurface cultural resources would not be an issue because the site would not be disturbed to accommodate the construction of new buildings. There would be no increase in noise associated with project construction and/or any noise impacts associated with future operational activities. Greenhouse gas emissions that could contribute to global warming would not increase. Lastly, no impact on public services and public utilities would occur under this alternative because the site would not be developed, so there would be no need for additional municipal services or utilities. Under this alternative, the number of vehicles accessing the site would not change; therefore, there would be no operational impacts to the surrounding roadway network or nearby freeways.

Relationship of the No Project/No Development Alternative to the Project Objectives

The No Project/No Development Alternative would not meet any of the project objectives because the site would not be developed with any uses. Because no development would occur, the site would remain as agricultural land. No residential and commercial uses would be developed to serve Manteca or San Joaquin County residents. This alternative would not create new employment. Therefore, none of the project objectives would be accomplished under this alternative.

No Project/Existing General Plan Alternative

Description

This alternative assumes that the proposed project would not be developed, but the site would be developed as currently designated in the City of Manteca General Plan. The Manteca General Plan designates the project site as Low Density Residential (LDR; 318.8 acres), Medium Density Residential (MDR; 48.6 acres), High Density Residential (HDR; 40.5 acres), General Commercial (GC; 96.1 acres), Heavy Industrial (HI; 519.7 acres), and Park (P; 6.7 acres). For the purposes of this analysis, this alternative is assumed to develop at the same intensity as the proposed project for each land use designation (i.e., the same square footage of development per gross acre of designated land). The development intensities for the proposed project are shown in Table 6-2 along with the corresponding development that could occur under this alternative assuming the same intensity of development per acre. As shown, this alternative would result in 72 percent of the residential units of the proposed project (4,198 for the proposed project versus 3,306 for this alternative) and a 50 percent increase in non-residential square footage (8,195,000 sf for the proposed project versus 12,366,046 sf for this alternative).

TABLE 6-2

DEVELOPMENT INTENSITY FOR THE PROPOSED PROJECT AND EXISTING GENERAL PLAN ALTERNATIVE

Land Use Designation	Proposed Project Intensity	Existing General Plan Acreage	Existing General Plan Development Potential
Heavy Industrial	21,781 sf/acre	519.7	11,319,781 sf
General Commercial	10,887 sf/acre	96.1	1,046,264 sf
Low/Medium Density Residential	5.84 du/acre	367.4	2,145 units
High Density Residential	22 du/acre	40.5	891 units

Notes:
Based on proposed development intensities from the Austin Road Business Park and Residential Development project and existing General Plan designation for the project site.
Dwelling Units per acre = du/acre
Source: PBS&J, 2009.

Comparative Environmental Effects

This alternative would result in the change from agricultural use on the project site. Because the entire site would be converted to non-agricultural use under this alternative, this impact would be the same as that of the proposed project and would be significant and unavoidable.

This alternative would result in the same amount of land being converted to non-agricultural use as the proposed project; therefore, the same impacts related to Important Farmland and Williamson Act contracts would occur. Like the proposed project, any development under this alternative would be required to pay into the City's Agricultural Mitigation Fee Program to offset costs associated with the loss of productive agricultural lands converted for urban uses within the city. Nonetheless, it would still contribute to the decline in the amount of Important Farmland in the County and the state. Therefore, the impact under this alternative would be significant.

Air emissions for construction of the proposed project is modeled based on phasing identified for the project. As shown in Table 5.3-3 (Section 5.3, Air Quality), some phases of the project would exceed thresholds for some pollutants, including reactive organic gases (ROG) and oxides of nitrogen (NO_x). Because the total amount of development would be at a similar scale as the proposed project, construction emissions would be similar and would be significant. As shown in Tables 5.3-6 and 5.3-7, operational emissions of the proposed project would exceed thresholds for area emissions (ROG) and mobile emissions (ROG, NO_x, and PM_{10}). As discussed below, this alternative would generate approximately 17 percent fewer automobile trips than the proposed project. Consequently, it is assumed that mobile emissions would be reduced proportionately. However, although emissions would be reduced under this alternative, operational emissions under this alternative would also exceed thresholds. The air quality impacts of this alternative would be reduced compared to that of the proposed project, but would be significant and unavoidable like the project.

This alternative would convert the project site from agricultural use, like the proposed project. Therefore, this alternative could affect burrowing owls or protected trees and eliminate foraging habitat for Swainson's hawk and other raptors, similar to the proposed project. Implementation of mitigation measures identified for the proposed project would be required under this alternative to ensure less-than-significant impacts on these resources. The impact would be the same as the proposed project.

Like the proposed project, because there are no resources on the project site that possess attributes that would make them eligible for listing on the National Register of Historic Places or California Register of Historical Resources. Therefore, neither the proposed project nor this alternative would affect any historical resources. As discussed in Section 5.5, Cultural Resources, material evidence and historical records demonstrate that the project area has been subject to intensive prehistoric and historic human use, and it is possible that previously unknown significant prehistoric and historic-era archaeological resources or human remains could be present on the site. If present, these resources or remains could be damaged or destroyed by earth-disturbing project construction activities. Mitigation measures identified for the proposed project would reduce the potential for impact on undiscovered resources to a less-than-significant level. This mitigation measure would also reduce the potential for impact for this alternative, and the potential effect under this alternative would be the same as the proposed project.

The noise analysis for the proposed project found that the construction noise and vibration could be reduced to less than significant with mitigation, but construction vibration could remain significant and unavoidable even with mitigation. Construction vibration could also be significant under this alternative. It was also determined in the noise analysis that operational noise due to increased automobile traffic would result in significant and unavoidable increases in ambient noise. Because this alternative would result in fewer automobile trips than the proposed project, the increase in vehicle noise under this alternative would be less, but would still be significant. The noise analysis also found that railroad operations, particularly the horns at crossings, would result in a significant and unavoidable impact. Residential development under this alternative would likely experience similar noise levels and this would be a significant impact, even with mitigation for the proposed

project. Because this alternative would generate less traffic than the proposed project, noise impacts under this alternative would be less than that of the proposed project.

As with the proposed project, any development under this alternative would be required to pay all applicable fees toward the provision of services. Residential uses generally generate more calls for emergency services (i.e., police and fire) than non-residential uses. Therefore, because this alternative has fewer residences, the demand for police and fire services under this alternative would be less than the proposed project. Similarly, there would be fewer students under this alternative due to the reduction in housing. Impacts on public services would be less than significant under this alternative.

This alternative would require the construction of additional facilities in the potable water system to serve the project site, such as additional pumps or water storage to ensure that adequate peak hour capacity is available. Consequently, this alternative would require mitigation similar to that for the proposed project. With implementation of this mitigation, water supply impacts would be less than significant, like the proposed project. The analysis for other utilities, including wastewater, stormwater, solid waste, and energy were found to be less than significant for the proposed project. Demand for utilities generated by this alternative would be similar to that of the proposed project, and this would also be a less-than-significant impact.

Fehr and Peers calculated automobile trip generation for this alternative using the same methodology as was used for the proposed project. With the land uses described above, this alternative would generate 7,215 net new trips, compared to 8,717 net new trips for the proposed project. Because this alternative would generate approximately 83% of the trips generated by the proposed project, impacts on roadways would be less severe under this alternative. However, because of constraints due to the capacity at the existing Austin Road interchange, this alternative would require construction of the relocated interchange as well as other mitigation described for the project. Similar to the proposed project, full buildout of this alternative could not occur without significant traffic impacts unless the interchange was constructed. Traffic impacts would be less severe under this alternative, but would be significant.

The analysis for greenhouse gas emissions and climate change found that compliance with mitigation measures during project construction would reduce the project's impact from construction-related greenhouse gas emissions to less-than-significant levels. However, operational emissions of the proposed project could not be reduced to the San Joaquin Valley Air Pollution Control District target level of 29 percent. Therefore, this was considered a significant impact. It is assumed that the same mitigation measures applied during construction would ensure that construction-related emissions of greenhouse gases would also be less than significant under this alternative. Similar to the proposed project, it is not certain whether this alternative could achieve the target reduction of 29 percent for operational emissions. Therefore, this would also be a significant unavoidable impact for this alternative.

Conclusion

The development under the existing General Plan designations would develop the entire project site, like the proposed project. Consequently, footprint-related impacts of this alternative would be the same as the proposed project. Because the land use mix would differ from the proposed project, with less residential development and more non-residential, this alternative would generate fewer automobile trips. The reduction in trips would also result in a reduction in air emissions, traffic noise, and greenhouse gas emissions. The same or similar mitigation measures would be required to reduce the severity of the impacts identified for the proposed project. In addition, the significant impacts identified for the proposed project, including those related to aesthetics, agricultural resources, air quality, noise, transportation, and climate change, would also be significant under this alternative.

Relationship of the No Project/Existing General Plan Alternative to the Project Objectives

The No Project/Existing General Plan Alternative would be able to achieve a majority of the project objectives of developing employment opportunities and housing options. This alternative could provide diversity of employment and housing types within the project area with distinctive landscaping, and be developed to include pedestrian features and parks. This alternative does not include a designation for professional/office uses, which could conflict with the project objectives if similar uses cannot be developed under the Heavy Industrial or Commercial designations. This alternative would be able to meet the objective to provide a major employment center identified in the 2023 General Plan.

Alternative 3: Reduced Footprint/10 Percent Development Alternative

Description

This alternative allows for development on the project up to the point at which significant impacts would occur on the existing Austin Road interchange and/or City streets. Based on the traffic study prepared for the proposed project, this would occur when development would generate 919 PM peak hour trips. Because there would be substantially less development under this alternative than under the proposed project, only a portion of the site would be developed. As shown in Figure 5.2-1 (Section 5.2, Agricultural Resources), the majority of the site is comprised of Farmland of Statewide Importance, but there is an area that contains Prime Farmland in the southern portion of the project site. Development on this portion of the site could be avoided under this alternative.

The approximate level of development that could occur in each of the land use categories to reach the 919 PM peak hour trips is shown in Table 6-3. The development intensity is based upon the trip generation rates from the Transportation section of this Draft EIR (see Table 5.9-6 in Section 5.9). It is assumed that this alternative could include development of a single land use up to the amount shown in the table or some combination of uses that reaches the maximum 919 PM peak hour trips.

TABLE 6-3

MAXIMUM DEVELOPMENT PER LAND USE TO ACHIEVE 919 PM PEAK HOUR TRIPS

Land Use Category	Square Footage/Units
High-Cube Warehouse	8,354,545 sf
Light Industrial	729,365 sf
Office Park - Business/Industrial/Professional	543,787 sf
Retail - Business/Industrial/Professional	785,470 sf
Mini-Storage	3,534,615 sf
General Commercial - Shopping Center	325,887 sf
Commercial Mixed Use - Shopping Center	230,326 sf
Office Park (Commercial Mixed Use)	404,846 sf
Apartment (Commercial Mixed Use)	1,482,258 sf
Low/Medium Density Residential	910 units
High Density Residential	1,482 units

Source: Fehr & Peers; PBS&J 2009.

Comparative Environmental Effects

This alternative would result in the change from agricultural use on a portion or portions of the project site. While this change may be noticeable to viewers, the magnitude of the change would be substantially less than that of the proposed project. Development on the northern portion of the site (along Woodward Avenue) or in the vicinity of the existing industrial/warehouse uses along SR 99 would likely be generally perceived as an extension of existing development, but would leave the agricultural character of the remainder of the site. This impact would be less severe than that of the proposed project and would be less than significant.

As discussed above, only a portion of the site would be developed under this alternative, thus, the area designated by the Farmland Mapping and Monitoring Program as Prime Farmland could be avoided. It is assumed that, like the proposed project, development of parcels under Williamson Act contract would not occur until any existing contracts expire. In addition, any development under this alternative would be required to pay into the City's Agricultural Mitigation Fee Program to offset costs associated with the loss of productive agricultural lands converted for urban uses within the city. Although this alternative would result in less severe impacts on agricultural resources and could avoid the conversion of the Prime Farmland on the project site, it would still contribute to the decline in the amount of Important Farmland in the County and the state. Therefore, the impact under this alternative would be significant.

Air emissions for construction of the proposed project is modeled based on phasing identified for the project. As shown in Table 5.3-3 (Section 5.3, Air Quality), some phases of the project would exceed thresholds for some pollutants, including ROG and NO_x. Depending upon the type of development constructed under this alternative and the schedule under which it would be constructed, this alternative could result in construction emissions that exceed the thresholds. However, because the total amount of development would be substantially less than the proposed project, the duration of construction emissions would be shorter. In addition, construction could be phased under this alternative to avoid significant construction emissions. As shown in Tables 5.3-6

and 5.3-7, operational emissions of the proposed project would exceed thresholds for area emissions (ROG) and mobile emissions (ROG, NO_x, and PM_{10}). However, with a 90 percent reduction in the amount of development and a corresponding decrease in project emissions, this alternative would be below the thresholds. Consequently, impacts related to construction air emissions under this alternative could exceed thresholds if all development were to occur in one phase, but could be phased to avoid construction impacts. Operational impacts under this alternative would not exceed thresholds. The air quality impacts of this alternative would be less severe than the proposed project. With phasing to avoid construction emission thresholds, air quality impacts of this alternative would be less than significant.

This analysis assumes development under this alternative would convert approximately 10 percent of the project site from agricultural use; however, depending upon the type of use, more land area could actually be developed. For instance, if only high cube warehouse were developed, given the number peak hour trips generated per square foot and the maximum site coverage for Industrial, approximately 45 percent of the site could be developed. In either case, the land developed would be less than that of the proposed project. Depending on the location of development, this alternative could affect burrowing owls or protected trees and eliminate foraging habitat for Swainson's hawk and other raptors. Implementation of mitigation measures identified for the proposed project would be required under this alternative to ensure less-than-significant impacts on these resources. Nonetheless, because less land would be converted or disturbed under this alternative, the impact would be less severe than the proposed project.

Like the proposed project, because there are no resources on the project site that possess attributes that would make them eligible for listing on the National Register of Historic Places or California Register of Historical Resources. Therefore, neither the proposed project nor this alternative would affect any historical resources. As discussed in Section 5.5, Cultural Resources, material evidence and historical records demonstrate that the project area has been subject to intensive prehistoric and historic human use, and it is possible that previously unknown significant prehistoric and historic-era archaeological resources or human remains could be present on the site. If present, these resources or remains could be damaged or destroyed by earth-disturbing project construction activities. Mitigation measures identified for the proposed project would reduce the potential for impact on undiscovered resources to a less-than-significant level. This mitigation measure would also reduce the potential for impact for this alternative, but because less land would be disturbed under this alternative, the potential effect would be less severe than the proposed project.

The noise analysis for the proposed project found that the construction noise could be reduced to less than significant with mitigation, but construction vibration could remain significant and unavoidable even with mitigation. Under this alternative, depending on the use (i.e., residential or non-residential) and the location of sensitive uses relative to construction, construction vibration could also be significant. It was also determined in the noise analysis that operational noise due to increased automobile traffic would result in significant and unavoidable increases in ambient noise. Because this alternative would result in substantially less development, it is unlikely that the increase in vehicle trips under this alternative would increase noise such that it would be significant. The noise analysis also found that railroad operations, particularly the horns at crossings, would result in

a significant and unavoidable impact. Because any residential development under this alternative, if any were to be developed, could be situated far enough away from any crossings, this impact could be less-than-significant. Overall, because this alternative would develop less than the proposed project, it would generate less automobile noise and could be designed to minimize effects of rail noise, so noise impacts under this alternative would be less severe than the proposed project.

As with the proposed project, any development under this alternative would be required to pay all applicable fees toward the provision of services. Because this alternative would include less development, demand for services would be substantially reduced compared to the proposed project. Impacts on public services would be less than significant under this alternative.

This alternative would require the construction of additional facilities in the potable water system to serve the project site, such as additional pumps or water storage to ensure that adequate peak hour capacity is available. Consequently, this alternative would require mitigation similar to that for the proposed project, though the capacity of wells and/or pumps would be less than that required for the proposed project. With implementation of this mitigation, water supply impacts would be less than significant, like the proposed project. The analysis for other utilities, including wastewater, stormwater, solid waste, and energy were found to be less than significant for the proposed project. Because the demand for utilities generated by this reduced intensity alternative would be substantially less than that of the proposed project, this would also be a less-than-significant impact.

As discussed above, this alternative is based upon a level of development that would ensure that traffic generated by the alternative would not exceed 919 PM peak hour trips. Consequently, this alternative would not result in significant effects on local roadways. However, as shown in Table 5.9-5 (see Section 5.9 Transportation and Circulation), nine of the sixteen freeway segments studied operate at LOS E or F, which is considered unacceptable operations. Consequently, even the limited development under this alternative would exacerbate the unacceptable conditions on these freeway segments and result in a significant impact.

The analysis for greenhouse gas emissions and climate change found that compliance with mitigation measures during project construction would reduce the project's impact from construction-related greenhouse gas emissions to less-than-significant levels. However, operational emissions of the proposed project could not be reduced to the San Joaquin Valley Air Pollution Control District target level of 29 percent. Therefore, this was considered a significant impact. It is assumed that the same mitigation measures applied during construction would ensure that construction-related emissions of greenhouse gases would also be less than significant under this alternative. Similar to the proposed project, it is not certain whether this alternative could achieve the target reduction of 29 percent for operational emissions. Therefore, this would also be a significant unavoidable impact for this alternative.

Conclusion

Overall, this alternative would reduce the severity of some of the impacts identified for the proposed project, including those related to aesthetics, agricultural resources, air quality, biological resources, cultural resources, noise, services and utilities, and transportation. This alternative would also result

in significant and unavoidable impacts related to conversion of agricultural land to non-agricultural use, contribution of traffic to already-impacted state highways, and generation of greenhouse gases, although these effects would be less severe than that identified for the proposed project.

Relationship of the Reduced Footprint/10 Percent Development Alternative to the Project Objectives

This alternative could provide some diversity of employment and housing types within the project area with distinctive landscaping, and be developed to include pedestrian features and parks. However, because the scale of this alternative is so reduced compared to the proposed project, the extent to which these objectives could be achieved is much less. In addition, the ability to provide retail, commercial, industrial, and professional uses in addition to residential would be hindered due to the size of this alternative. This alternative would also fail to meet the objective to provide a major employment center identified in the 2023 General Plan. As discussed under the No Project/ Existing General Plan Alternative, the entire site is designated for future development at intensities similar to that proposed for the project. Consequently, this alternative would not be consistent with this project objective.

General Plan Policy C-P-20 supports the development of a new Austin Road and SR 99 interchange, among other roadway improvements. As discussed in Section 5.9, Transportation and Circulation, traffic modeling for the proposed project indicates that the Austin Road/SR 99 interchange is deficient under cumulative no project conditions because traffic under cumulative conditions accessing southern Manteca would overwhelm the ramp terminal intersections. Analysis of operation of the Austin Road/SR 99 interchange under cumulative no project conditions (with the improvements described under the existing plus project with partial buildout mitigation; see Section 5.10 transportation and Circulation), indicate that the ramp terminal intersections are overwhelmed and operate at LOS F conditions in the PM peak hour. This finding is relevant because it indicates that even in the absence of the proposed project, the existing Austin Road/SR 99 interchange is deficient under cumulative conditions from both a design and operations perspective. The only solution to this deficiency is to construct the replacement interchange. The ARBPRC project is a key element in implementing this solution because the project can provide a substantial amount of funding and will provide the right of way for the roads approaching the new interchange. Consequently, an alternative that develops only a portion of the site would be generally inconsistent with the General Plan and could jeopardize future construction of the interchange.

Environmentally Superior Alternative

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. Section 15126.6 (e)(2) of the CEQA Guidelines requires that an environmentally superior alternative be designated, and states that if the environmentally superior alternative is the No Project alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

The environmentally superior alternative is the No Project/No Development Alternative due to the limited environmental impacts associated with this alternative. However, the No Project/No Development Alternative does not achieve any of the project's objectives. The Reduced Footprint/10 Percent Development Alternative would result in less severe impacts than the proposed project and would, therefore, be the environmentally superior alternative. However, as discussed above, the Reduced Footprint/10 Percent Development Alternative would not fulfill most of the project objectives and would generally be inconsistent with the General Plan.

7. CEQA CONSIDERATIONS

7.0 CEQA CONSIDERATIONS

INTRODUCTION

Section 15126 of the California Environmental Quality Act (CEQA) Guidelines requires that all aspects of a project must be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the EIR must also identify (1) significant environmental effects of the proposed project, (2) significant environmental effects that cannot be avoided if the proposed project is implemented, (3) significant irreversible environmental changes that would result from implementation of the proposed project, and (4) growth-inducing impacts of the proposed project.

Significant Environmental Effects

Chapter 3 of this EIR, Summary of Impacts and Mitigation Measures, and Sections 5.1 through 5.10 of this EIR provide a comprehensive identification of the proposed project's environmental effects, including the level of significance both before and after mitigation.

Significant-and-Unavoidable Impacts

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. The environmental effects of the proposed project on various aspects of the environment are discussed in detail in Chapter 5 of this EIR. Project-specific and cumulative impacts that cannot be avoided if the project is approved as proposed are listed below.

Project-Specific Significant and Unavoidable Impacts

Project-specific significant and unavoidable impacts identified for the proposed project include:

5.1-3 The proposed project could substantially degrade the existing visual character or quality of the site and its surroundings.

5.2-1 The proposed project could convert Important Farmland (Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance) as defined in the California Department of Conservation Farmland Mapping and Monitoring Program to non-agricultural use.

5.2-2 The proposed project could conflict with existing zoning for agricultural use or with a Williamson Act contract.

5.3-1 Construction activities could generate substantial concentrations of criteria air pollutants, including fugitive dust.

5.3-2 Operation of the proposed project would generate emissions that may exceed SJVAPCD thresholds for ROG, NO_x and PM_{10}.

5.3-3 Uses developed within the proposed project could expose sensitive receptors to project-generated toxic air emissions.

5.6-2 Operation of land uses associated with the proposed project could result in a substantial increase in local traffic noise levels over existing and future noise levels without the project.

5.6-4 Construction of the proposed project could result in the exposure of sensitive receptors to excessive vibration levels.

5.6-6 Implementation of the proposed project could result in the exposure of sensitive land uses to excessive noise levels associated with the continued operation of the UPRR rail line.

5.9-1 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the four intersections around the Austin Road/SR 99 interchange.

5.9-2 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels at the Main Street/Eastbound SR 120 Ramps signalized intersection.

5.9-3 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Main Street/Atherton Drive intersection.

5.9-7 The proposed project would cause an increase in traffic which would degrade intersection operations to unacceptable levels and meet AM and/or PM peak hour signal warrants at the Austin Road/Ripon Road intersection.

5.9-8 The proposed project would cause an increase in traffic which would degrade or exacerbate unacceptable LOS on 13 freeway mainline segments near the project.

5.9-9 The proposed project would cause an increase in traffic which would degrade or exacerbate unacceptable operations at freeway merge, diverge, and weaving areas near the project.

5.9-13 The proposed project would generate new travel across at-grade railroad crossings.

Significant Irreversible Environmental Effects

Section 15126.2(c) of the CEQA Guidelines requires a discussion of any significant irreversible environmental changes that would be caused by the proposed project. Section 15126.2(c) states:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement

> which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Generally, a project would result in significant irreversible environmental changes if:

- The primary and secondary impacts would generally commit future generations to similar uses;
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project;
- The project would involve a large commitment of nonrenewable resources; or
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Implementation of the proposed project would result in the long-term commitment of resources of the project site to urban land use. The development of the proposed project would likely result in or contribute to the following irreversible environmental changes:

- Conversion of existing undeveloped land, approximately 1,049 acres both on-site and off-site currently used for agricultural uses to urban land uses, thus precluding other alternate land uses in the future.
- Conversion of existing habitat both on and off-site (approximately 1,049 acres) and irreversible loss of wildlife (foraging habitat for raptors).
- Irreversible consumption of goods and services associated with the future population.
- Irreversible consumption of energy and natural resources associated with the future residential and employee population.
- Degradation of air quality associated with project construction and operation after mitigation.

Development of the proposed project would result in the continued commitment of the entire project site to urban development, thereby precluding any other uses for the lifespan of the project. Restoration of the site to pre-developed conditions would not be feasible given the degree of disturbance, the urbanization of the area, and the level of capital investment.

Resources that would be permanently and continually consumed by project implementation include water, electricity, natural gas, and fossil fuels; however, the amount and rate of consumption of these resources would not result in the unnecessary, inefficient, or wasteful use of resources. With respect to operational activities, compliance with all applicable building codes, as well as mitigation measures, planning policies, and standard conservation features, would ensure that all natural resources are conserved to the maximum extent possible. It is also possible that new technologies or systems would emerge, or would become more cost-effective or user-friendly, to further reduce the reliance upon nonrenewable natural resources. For example, mobile emissions associated with automobiles and trucks are anticipated to be less polluting in the future due to new technology designed to improve the efficiency of engines. Nonetheless, construction activities related to the

proposed project would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels (including fuel oil), natural gas, and gasoline for automobiles and construction equipment.

The CEQA Guidelines also require a discussion of the potential for irreversible environmental damage caused by an accident associated with the project. While the project would result in the use, transport, storage, and disposal of hazardous wastes, all activities would be required to comply with applicable State and federal laws related to hazardous materials, which significantly reduces the likelihood and severity of accidents that could result in irreversible environmental damage. In addition, the project does not include any uniquely hazardous uses that would require any special handling or storage.

Implementation of the proposed project would result in the long-term commitment of resources to urban development. The most notable significant irreversible impacts are a reduction in vegetation and wildlife communities; increased generation of pollutants; and the short-term commitment of non-renewable and/or slowly renewable natural and energy resources, such as lumber and other forest products, mineral resources, and water resources during construction activities. Operations associated with future uses would also consume natural gas and electrical energy. These irreversible impacts, which are, as yet, unavoidable consequences of urban growth, are described in detail in the appropriate technical sections of this EIR (see Chapter 5).

Growth-Inducing Impacts

As required by Section 15126.2(d) of the CEQA Guidelines, an EIR must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also, the EIR must discuss the characteristics of the project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or other precedents that directly or indirectly encourage additional growth. Under CEQA, this growth is not to be considered necessarily detrimental, beneficial, or of significant consequence. Induced growth would be considered a significant impact if it can be demonstrated that the potential growth, directly or indirectly, significantly affects the environment.

In general, a project may foster spatial, economic, or population growth in a geographic area if the project removes an impediment to growth (e.g., the establishment of an essential public service, the provision of the new access to an area; a change in zoning or general plan amendment approval); or economic expansion or growth occurs in an area in response to the project (e.g., changes in revenue base, employment expansion, etc). These circumstances are further described below:

Elimination of Obstacles to Growth: This refers to the extent to which a proposed project removes infrastructure limitations or provides infrastructure capacity, or removes regulatory constraints that could result in growth unforeseen at the time of project approval.

Economic Effects: This refers to the extent to which a proposed project could cause increased activity in the local or regional economy. Economic effects can include such effects as the Multiplier Effect. A "multiplier" is an economic term used to describe inter-relationships among various sectors of the economy. The multiplier effect provides a quantitative description of the direct employment effect of a project, as well as indirect and induced employment growth. The multiplier effect acknowledges that the on-site employment and population growth of each project is not the complete picture of growth caused by the project.

Elimination of Obstacles to Growth

The elimination of either physical or regulatory obstacles to growth is considered to be a growth-inducing effect. A physical obstacle to growth typically involves the lack of public service infrastructure. The extension of public service infrastructure, including roadways, water mains, and sewer lines, into areas that are not currently provided with these services would be expected to support new development. Similarly, the elimination or change to a regulatory obstacle, including existing growth and development policies, could result in new growth.

Removal of Infrastructure Limitations or Provision of Capacity

The elimination of physical obstacles to growth is considered a growth-inducing effect. A number of physical constraints to growth currently exist in the vicinity of the project. In summary, the primary growth obstacles in the area today include the lack of infrastructure on the site. The site can be accessed directly from Austin Road. There is no sewer, water, or utilities infrastructure on the site or in the areas immediately adjacent to the site. The proposed project would include road access to the site and infrastructure to serve the future population at the site.

The proposed project includes sizing of infrastructure to serve development approved under the plan. Development of infrastructure could precede development of certain phases of the project; that is, some infrastructure improvements would be sized to accommodate more than demand at the time of implementation, based upon master plans prepared by the City. In some cases, such as for storm drainage, the City may require the construction of infrastructure beyond the capacity required for the project. While this could be considered growth inducing, the areas adjacent to the project site have been identified in the General Plan as suitable for development at urban or suburban intensities. Although the area has been identified by the City as suitable for future development, the proposed project could eliminate some of the infrastructure constraints that are currently obstacles to growth in the south Manteca area and hasten the development of the area.

Economic Effects

In addition to the employment generated by the proposed project, additional local employment can be generated through what is commonly referred to as the "multiplier effect." The multiplier effect tends to be greater in regions with larger diverse economies due to a decrease in the requirement to import goods and services from outside the region.

Two different types of additional employment are tracked through the multiplier effect. Indirect employment includes those additional jobs that are generated through the expenditure patterns of direct employment associated with the project. Workers and students associated with the project would spend money in the local economy, and the expenditure of that money would result in additional jobs. Indirect jobs tend to be in relatively close proximity to the places of employment and residence.

The multiplier effect also calculates induced employment. Induced employment follows the economic effect of employment beyond the expenditures of the employees within the proposed project area to include jobs created by the stream of goods and services necessary to support businesses within the proposed project. For example, when a manufacturer buys products or sells products, the employment associated with those inputs or outputs are considered induced employment.

For example, when an employee or resident of the project goes out to lunch, the person who serves the project employee lunch holds a job that was indirectly caused by the proposed project. When the server then goes out and spends money in the economy, the jobs generated by this third-tier effect are considered induced employment.

The multiplier effect also considers the secondary effect of employee or resident expenditures. Thus, it includes the economic effect of the dollars spent by those employees, students and residents who support the employees of the project.

Increased future employment generated by resident and employee spending ultimately results in physical development of space to accommodate those employees. It is the characteristics of this physical space and its specific location that will determine the type and magnitude of environmental impacts of this additional economic activity. Although the economic effect can be predicted, the actual environmental implications of this type of economic growth are too speculative to predict or evaluate, since they can be spread throughout the City, County, and beyond.

Impacts of Induced Growth

The growth induced directly and indirectly by the proposed project would contribute to a number of environmental impacts in San Joaquin County and the nearby City of Ripon, as well as the greater regional area, including: traffic congestion; air quality deterioration; loss of agricultural land and open space; loss of habitat; and increased demand for housing.

Indirect and induced employment and population growth would further contribute to the loss of open space because it would encourage the conversion of undeveloped land to urban uses for additional housing and infrastructure. The construction of more roadways and infrastructure within the area would help to promote growth in the area.

Cumulative Impacts

CEQA requires that an EIR contain an assessment of the cumulative impacts that could be associated with the proposed project. This assessment involves examining project-related effects

on the environment in the context of similar effects that have been caused by past or existing projects, and the anticipated effects of future projects. Although project-related impacts may be individually minor, the cumulative effects of these impacts, in combination with the impacts of other projects, could be significant under CEQA and must be addressed. (CEQA Guidelines, Section 15130(a)). Where a lead agency concludes that the cumulative effects of a project, taken together with the impacts of past, present, and probable future projects, are significant, the lead agency then must determine whether the project's incremental contribution to such significant cumulative impact is "cumulatively considerable" (and thus significant in and of itself).

Aesthetics

Because the project proposes land uses that could develop large scale structures, the project would contribute to a substantial change in visual character from agricultural to developed. The proposed project would contribute to the cumulative increase in ambient light that would exist in combination with other development, and add new light sources and glare that could create hazards.

Agricultural Resources

The project would contribute to the trend of land conversion from agricultural uses to urban and other non-agricultural uses (including wildlife habitat enhancement) in the Central Valley.

Air Quality

The proposed project would make a cumulatively considerable contribution during construction with regard to SJVAPCD-identified criteria pollutants. The proposed project's contribution to ROG and NOx criteria pollutant emissions would be cumulatively considerable. Project-generated toxic air emissions would contribute to potential health risks.

Cultural Resources

The proposed project has the potential to adversely affect significant archaeological resources and human remains that are unique and non-renewable members of finite classes.

Noise

The contribution of the proposed project to future roadway noise levels would exceed the identified thresholds of significance.

Vibration from future development could potentially combine with construction vibration of the proposed project to exceed thresholds for vibration.

Transportation and Circulation

The proposed project would cause an increase in traffic which would degrade the signalized intersection operations to unacceptable levels at the Main Street/SR 120 Ramp terminal intersections.

The proposed project would exacerbate unacceptable operations at the Main Street/Atherton Drive intersection.

The proposed project exacerbates unacceptable operations at the Main Street/Woodward Avenue intersection.

The proposed project would exacerbate unacceptable operations at the four intersections around the Austin Road/SR 99 interchange.

The proposed project would exacerbate unacceptable operations at the Austin Road/Ripon Road intersection.

The proposed project would exacerbate unacceptable freeway mainline operations on all 16 freeway mainline segments near the project.

The proposed project would cause an increase in traffic which would exacerbate unacceptable operations at freeway merge, diverge, and weaving areas near the project.

Global Climate Change

The construction of residential, industrial, office, and commercial uses under the proposed project would result in additional greenhouse gas emissions, which could represent a substantial contribution to greenhouse gas emissions in California.

8. REFERENCES

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9. REPORT PREPARATION

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