

Draft Environmental Impact Report West Patterson Business Park Expansion Project

State Clearinghouse No. 2011082016

City of Patterson • May 1, 2012



Michael Brandman Associates

Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583

DRAFT
Environmental Impact Report
West Patterson Business Park Expansion Project
City of Patterson, Stanislaus County, California
State Clearinghouse No. 2011082016

Prepared for:



City of Patterson
Community Development Department
1 Plaza
Patterson, CA 95363
Phone: 209.895.8024

Contact: Joel Andrews, City Planner

Prepared by:

Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583
925.830.2733

Contact: Jason Brandman, Project Director
Grant Gruber, Project Manager



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ACRONYMS AND ABBREVIATIONS

ADT	average daily traffic
AM Peak	Weekday morning peak hour (7 a.m. to 9 a.m.)
ARB	California Air Resources Board
AST	aboveground storage tank
ATCM	Airborne Toxic Control Measures
Bcf	billion cubic feet
BMP	Best Management Practices
BVOC	biogenic volatile organic compound
C	Celsius
CAAQS	California Ambient Air Quality Standards
Cal OSHA	California Occupational Health and Safety Administration
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	chlorofluorocarbon
cfs	cubic feet per second
CH ₄	methane
CHL	California Historical Landmarks
CMP	Congestion Management Process for the Stanislaus County Region
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society

Acronyms and Abbreviations

CO	carbon monoxide
CO ₂ e	carbon dioxide equivalent
CPHI	California Points of Historical Interest
CPUC	California Public Utilities Code / Commission
CVP	Central Valley Project
dB	decibel
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EMF	electromagnetic field
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
F	Fahrenheit
FAR	floor area ratio
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
gpcd	gallons per capita per day
gpd/ft	gallons per day per foot
gpm	gallons per minute
GWh/y	gigawatt-hours per year
GWP	global warming potential
HCM	Highway Capacity Manual
HFC	hydrofluorocarbon

HRA	Health Risk Assessment
HRI	California Historic Resources Inventory
HVAC	heating, ventilation, and air conditioning
I	Interstate
IPCC	United Nations Intergovernmental Panel on Climate Change
ISR	Indirect Source Review
ITE	Institute of Transportation Engineers
LAFCO	Local Agency Formation Commission
L _{dn}	day/night average sound level
LED	light emitting diode
L _{eq}	equivalent sound level
LESA	Land Evaluation and Site Assessment
LOS	Level of Service
MBA	Michael Brandman Associates
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MMI	Modified Mercalli Intensity
mph	miles per hour
MTCO ₂ e	metric tons of carbon dioxide equivalent
MUTCD	Manual on Uniform Traffic Control Devices
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NO ₂	nitrogen dioxide
NOA	Notice of Availability

Acronyms and Abbreviations

NOC	Notice of Completion
NOP	Notice of Preparation
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O ₃	ozone
OEHHA	California Office of Environmental Health Hazard Assessment
PCB	polychlorinated biphenyl
pCi/l	picoCuries per liter
PFC	perfluorocarbon
PG&E	Pacific Gas and Electric Company
PM Peak	Weekday afternoon peak hour (4 p.m. to 6 p.m.)
PM _x	particulate matter
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PVC	polyvinyl chloride
RCRA	Federal Resource Conservation and Recovery Act
RMP	Risk Management Plan
ROG	reactive organic gases
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SF ₆	sulfur hexafluoride
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLDMWA	San Luis Delta-Mendota Water Authority

SO ₂	sulfur dioxide
StanCog	Stanislaus Council of Governments
StaRT	Stanislaus Regional Transit
STIP	State Transportation Improvement Plan
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TCM	transportation control measures
TDS	total dissolved solids
Tg	teragram
therms/y	therms per year
TID	Turlock Irrigation District
TIF	Traffic Impact Fee
TMDL	Total Maximum Daily Load
TRU	transportation refrigeration unit
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
VMT	vehicle miles traveled
vpd	vehicles per day
WDR	Waste Discharge Requirements
WPIBP	West Patterson Industrial Business Park
WPLI	West Patterson Light Industrial
WSA	Water Supply Assessment

EXECUTIVE SUMMARY

Purpose

This Draft Environmental Impact Report (Draft EIR) is prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the implementation of West Patterson Business Park Expansion Project (State Clearinghouse No. 2011082016). This document is prepared in conformance with CEQA (California Public Resources Code, Section 21000, et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000, et seq.).

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

Project Summary

Project Location

The project site is located in unincorporated Stanislaus County, California, adjacent to the City of Patterson. The project site consists of 26 parcels totaling 1,119 gross acres. The triangular-shaped project site is bounded by Interstate 5 and the California Aqueduct (west and south), Zacharias Road (north), and Rogers Road and Villa del Lago highway commercial center (east).

Project Description

The proposed project consists of the development of approximately 13.47 million square feet of light industrial, business park, and general commercial uses and associated infrastructure on approximately 880 net acres of the project site.

The proposed project consists of two components: Arambel Business Park and the KDN Retail Center/Business Park. The Arambel Business Park would be the larger of the two components and would consist of 12.18 million square feet of business park, general commercial, and light industrial uses on 776 net acres. The KDN Retail Center/Business Park would be the smaller of the two components and would consist of 1.28 million square feet of business park and general commercial uses on 104 net acres.

Infrastructure improvements would be implemented, including roadways, potable water, non-potable water, sewer, storm drainage, streetlights, electricity, and natural gas facilities. Refer to Section 2, Project Description for a complete description of the project.

Project Objectives

The objectives of the proposed project are to:

1. Create new jobs for local residents.
2. Contribute to economic growth through capital investment, the creation of new jobs, the establishment of new businesses, and the expansion of the tax base.
3. Facilitate the logical, orderly, and planned development of the project area through the use of a comprehensive planning document.
4. Promote economic development that is consistent with the long-term vision of the City of Patterson General Plan
5. Prevent land use conflicts and discourage the premature conversion of agricultural land through the use of phasing, buffering, and other appropriate land planning techniques.
6. Provide new business park, general commercial, and light industrial uses that can be easily accessed from the existing and planned roadway network.
7. Minimize and mitigate truck travel impacts by siting the project in proximity to existing and future interchanges with Interstate 5 and the planned South County Expressway.
8. Develop new general commercial uses to cater to local residents and workers, as well as travelers on the Interstate 5 corridor.
9. Provide open space areas within the project area that serve multiple purposes such as storm drainage, recreation, and land use buffering.
10. Ensure that adequate potable water, sewer, storm drainage, roadways, and other supporting infrastructure is implemented in an efficient, logical, and timely manner to ensure that acceptable levels of public health, safety, and welfare are maintained.

Significant Unavoidable Adverse Impacts

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

- **Conversion of Important Farmland:** Buildout of the proposed project would result in the conversion of Important Farmland to non-agricultural use. Mitigation is proposed requiring the applicant to permanently preserve farmland elsewhere in Stanislaus County. However, the preservation of farmland elsewhere would not fully offset the loss of Important Farmland; therefore, the residual significance of this impact is significant and unavoidable.
- **Air Quality Attainment Plan Consistency:** The proposed project would be inconsistent with the San Joaquin Valley Air Pollution Control District's regional air quality planning assumptions. Mitigation is proposed requiring the implementation of feasible emissions

- reduction measures; however, these measures would not reconcile this inconsistency. Therefore, the residual significance of this impact is significant and unavoidable.
- **Cumulatively Considerable Net Increase of Nonattainment Criteria Pollutants:** The project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors). Mitigation is proposed requiring the implementation of air emissions reduction measures, but it would not fully reduce this impact to a level of less than significant. Therefore, the residual significance is significant and unavoidable.
 - **Combined Transportation and Non-Transportation Noise:** The proposed project would generate vehicle trips that would contribute to unacceptable combined transportation and non-transportation noise levels. No feasible mitigation is available to fully mitigate this impact to a level of less than significant. As such, the residual significance of this impact is significant and unavoidable.
 - **Existing Plus Phase I Traffic:** Phase I of the proposed project would generate vehicle trips that would contribute to unacceptable traffic operations under Existing Plus Phase I conditions. Mitigation is proposed that would require the applicant to contribute fees to fund necessary improvements; however, there is uncertainty regarding actual implementation of the improvements. As such, the residual significance of this impact is significant and unavoidable.
 - **2035 Cumulative Traffic:** The proposed project would generate vehicle trips that would contribute to unacceptable traffic operations under 2035 Cumulative conditions. Mitigation is proposed that would require the applicant to contribute fees to fund necessary improvements; however, there is uncertainty regarding actual implementation of the improvements. As such, the residual significance of this impact is significant and unavoidable.

Summary of Project Alternatives

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

No Project Alternative

Under the No Project Alternative, the proposed project would not be developed and no changes would occur to the project site.

Arambel Business Park Alternative

Under the Arambel Business Park Alternative, the Arambel Business Park component would be developed, which consists of approximately 12.18 million square feet of business park, general

commercial, and light industrial uses on 776 net acres, and the KDN Retail Center/Business Park component would not be developed.

KDN Retail Center/Business Park Alternative

Under the KDN Retail Center/Business Park Alternative, the KDN Retail Center/Business Park component would be developed, which consists of approximately 1.28 million square feet of business park and general commercial uses on 104 net acres, and the Arambel Business Park component would not be developed. This alternative is identified as the “Environmentally Superior Alternative.”

Reduced Density Alternative

Under the Reduced Density Alternative, a total of 10.10 million square feet of business park, general commercial, and light industrial uses would be developed on 661 net acres of the project site, which represents a 25-percent reduction in acreage and square footage.

Areas of Controversy

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

The original Notice of Preparation (NOP) for the proposed project was issued on August 4, 2011. The NOP described the concept for the project and issues to be addressed in the EIR and was distributed to the State Clearinghouse, responsible agencies, and other interested parties for a 30-day public review period extending from August 4, 2011 through September 6, 2011. A public scoping meeting was held on August 31, 2011 at Patterson City Hall to solicit input on the scope of the EIR.

Following release of the original NOP, the applicant revised the project plans to add approximately 1.72 million square feet. As such, the City of Patterson determined that an Amended NOP needed to be issued. An Amended NOP was issued on March 22, 2012, which circulated between March 22, 2012 and April 23, 2012 for the statutory 30-day public review period.

Both the original NOP and Amended NOP identified the potential for significant impacts on the environment related to the following topical areas:

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

Disagreement Among Experts

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

Potentially Controversial Issues

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

- Aesthetics, Light, and Glare
- Agricultural Land Conversion
- Criteria Pollutant Air Emissions
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Land Use
- Construction and Operational Noise
- Population Growth Inducement
- Public Services and Utilities
- Traffic Congestion

Public Review of the Draft EIR

Upon completion of the Draft EIR, the City of Patterson filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the public review period (Public Resources Code, Section 21161). Concurrent with the NOC, this Draft EIR has been distributed to responsible and trustee agencies, other affected agencies, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with Public Resources Code 21092(b)(3). A Notice of Availability was provided to public agencies and interested parties pursuant to CEQA Guidelines Sections 15085, 15087(c). During the public review period, the Draft EIR, including the technical appendices, is available for review at the City of Patterson and Stanislaus County Library Patterson Branch. The address for each location is provided below:

City of Patterson
Community Development Department
1 Plaza
Patterson, CA 95363
Hours:
Monday – Friday: 8 a.m. to 5 p.m.

Stanislaus County Library, Patterson Branch
46 North Salado Avenue
Patterson, CA 95363
Hours:
Monday, Tuesday, 10 a.m. to 6 p.m.
Wednesday, 10 a.m. to 8 p.m.
Friday, 10 a.m. to 5 p.m.
Saturday, 12 p.m. to 5 p.m.

The Draft EIR is also posted in electronic form on the City of Patterson's website:
<http://www.ci.patterson.ca.us/>.

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

Mr. Joel Andrews, City Planner
City of Patterson
Community Development Department
1 Plaza
Patterson, CA 95363
Phone: (209) 895-8020
Fax: (209) 895-8019
Email: jandrews@ci.patterson.ca.us

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

Executive Summary Matrix

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

Table ES-1: Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 3.1 - Aesthetics, Light, and Glare		
Impact AES-1: The proposed project would not have a substantial adverse effect on a scenic vista.	No mitigation is necessary.	Less than significant impact.
Impact AES-2: The proposed project would not substantially damage scenic resources within a state scenic highway.	No mitigation is necessary.	Less than significant impact.
Impact AES-3: The proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings.	No mitigation is necessary.	Less than significant impact.
Impact AES-4: The proposed project would not introduce new sources of substantial light or glare that would adversely affect day or nighttime views in the area.	No mitigation is necessary.	Less than significant impact.
Section 3.2 – Agricultural Resources		
Impact AG-1: The development of the proposed project will result in the conversion of Prime Farmland to non-agricultural use.	MM AG-1: Prior to issuance of the grading permit, the project applicant shall preserve Important Farmland acreage, as mapped by the California Department of Conservation Farmland Mapping and Monitoring Program, within Stanislaus County (but outside the Patterson Planning Area) at a ratio of no less than 1:1 for each acre of Important Farmland converted to non-agricultural use by the proposed project. Preserved acreage shall be of equal or higher quality to farmland converted to non-agricultural use. The preservation shall be accomplished through one of the following approaches: The applicant shall enter into a binding agreement with one or more private property owners or third-party organizations acceptable to the City of Patterson (e.g., Stanislaus County Farm Bureau or the American Farmland Trust) to permanently preserve farmland. The agreement shall identify an irrevocable instrument that will be recorded against the preserved acreage property. This option shall be pursued if the City of Patterson does not have a farmland preservation program in place at the time permits are sought.	Significant unavoidable impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	If the City of Patterson establishes a farmland preservation program before the project applies for construction permits for any phase of development, the City may require the applicant to pay fees to the City of Patterson equivalent to the cost of preserving Important Farmland. The City shall use the fees to fund an irrevocable instrument (e.g., deed restriction or preservation easements) to permanently preserve farmland.	
Impact AG-2: The proposed project would not conflict with agricultural zoning, but it may conflict with the provisions of an active Williamson Act contract.	MM AG-2: In the event that the Williamson Act contracts that encumber Assessor's Parcel Nos. 021-025-020 or 021-025-026 have not expired at the time of recordation of the first final map, the project applicant shall pay the Williamson Act contract cancellation fee as determined by the Stanislaus County Assessor's Office. This mitigation measure does not apply if both Williamson Act contracts have expired prior to recordation of the final map.	Less than significant impact.
Impact AG-3: The proposed project may create other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use.	MM AG-3: Prior to recordation of the final maps that adjoin lands in unincorporated Stanislaus County, the project applicant shall prepare and submit plans to the City of Patterson demonstrating that 150-foot minimum setbacks have been established between the proposed project and all agricultural lands in unincorporated Stanislaus County zoned General Agriculture (A-2). Pursuant to the County's policy, permitted uses within the setback may include public roadways, utilities, drainage facilities, rivers and adjacent riparian areas, landscaping, parking lots, and similar low-people-intensive uses. Permitted uses may also include non-agricultural uses adjoining or surrounding a project site (including but not limited to legal, non-conforming uses and home sites) that are of a permanent nature and are not likely to be returned to agriculture. Landscaping within a buffer setback area shall be designed to exclude turf areas that could induce activities and add to overall maintenance costs and water usage.	Less than significant impact.
Section 3.3 - Air Quality and Greenhouse Gas Emissions		
Impact AIR-1: The proposed project may conflict with or obstruct implementation of the applicable air quality plan.	Implement Mitigation Measures AIR-3a, AIR-3b, PSU-6a, PSU-6b, and TRANS-6.	Significant unavoidable impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact AIR-2: The project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation.	No mitigation is necessary.	Less than significant impact.
Impact AIR-3: The project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).	MM AIR-3a: Prior to issuance of building permits for each use, the project applicant shall demonstrate compliance with all applicable requirements of San Joaquin Valley Air Pollution Control District, Rule 9510 via the submittal of a Rule 9510 Implementation Plan to the City of Patterson for review and approval. The implementation plan shall achieve a 33-percent reduction in NO_x and a 45-percent reduction in PM₁₀ over the first 10 years of operations through the use of onsite emissions reduction measures or through the payment of offsite mitigation fees to the SJVAPCD for purchase of emission reductions. The requirements of the approved implementation plan shall be incorporated into the proposed project. MM AIR-3b: Prior to issuance of building permits for any use that would receive 10 or more truck deliveries per week, the project applicant shall demonstrate that the following anti-idling measures would be implemented: • Provide available electricity hookups for trucks in the loading dock areas. • Signs shall be posted in dock areas advising drivers of the maximum allowable idling time in accordance with California Air Resources Board regulations. • Telephone numbers of the building facilities manager and the California Air Resources Board shall be posted on signs at truck entrances to report idling violations.	Significant unavoidable impact.
Impact AIR-4: The project would not expose sensitive receptors to substantial air pollutant concentrations.	No mitigation is necessary.	Less than significant impact.
Impact AIR-5: The proposed project would not create objectionable odors affecting a substantial number of people.	MM AIR-5: Prior to commencement of onsite wastewater treatment plant operations, the project applicant shall prepare and submit a plan outlining Odor Control Best Management Practices to the City of Patterson and the San Joaquin Valley Air Pollution Control District for review and approval. The plan shall identify measures and practices that would prevent or minimize the release of objectionable odors from plant operations. The approved plan shall be incorporated into the proposed project.	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact AIR-6: The proposed project would not emit significant amounts of greenhouse gases or conflict with an applicable plan, policy, or regulation concerning greenhouse gas reduction.	Implement Mitigation Measures AIR-3b, PSU-3, and TRANS-6, and: MM AIR-6a: Prior to issuance of building permits for each project use, the project applicant shall prepare and submit plans to the City of Patterson for review and approval demonstrating that Energy Star-rated roof materials or equivalent would be installed on all roofed facilities. Energy Star-rated roof specifications include: • Built-up-roofs • Metal roofing products • Roof tiles • Spray polyurethane foam roof systems • Asphalt shingles • Single-ply membranes • Roof coating products, and • Modified bitumen. MM AIR-6b: Prior to issuance of building permits for each project use, the applicant shall prepare and submit documentation to the City of Patterson for review and approval demonstrating that energy efficiency measures have been incorporated to result in an increased efficiency above Title 24 requirements. The applicant shall maintain a record of efficiency calculations for each proposed building, and demonstrate to the City of Patterson that each phase of the project shall achieve a minimum 5 percent increase of efficiency over the latest adopted edition of the Title 24 standards.	Less than significant impact.
Impact AIR-7: The project may be affected by climate change through a reduction in the quality and supply of water available within the State or increased flooding.	Implement Mitigation Measure PSU-3.	Less than significant impact.
Section 3.4 - Biological Resources		
Impact BIO-1: The proposed project may have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the United States Fish and Wildlife Service.	MM BIO-1a: No more than 14 days prior to ground-disturbing activities that occur within the nesting season (typically from mid-February to mid-September), a qualified biologist shall perform a pre-construction survey for burrowing owl, loggerhead shrike, or nesting migratory birds active within the project site and within a 200-foot buffer of the project site to determine the presence or absence of these species. If these species are determined to be present, the applicant shall follow the guidelines outlined	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	by the California Department of Fish and Game and/or the U.S. Fish and Wildlife Service: • If burrowing owls are found onsite during the nesting season (February 1 to August 31), they shall be avoided by a 250-foot work-free buffer until it has been determined by a qualified biologist that the young have fledged and are independent of their parents. The 250-foot work-free buffer will be clearly defined (e.g., with orange construction fencing), and a biological monitor will visit the site randomly throughout the breeding season to ensure the area remains work-free and the owls are not negatively affected by construction activities. • If loggerhead shrike or any other migratory birds are found nesting onsite, a 50-foot work-free buffer area will be established and monitored by a qualified biologist until young have fledged and are independent of their parents. Again, nests and work-free buffers would be monitored. • If burrowing owls occur on the project area during the wintering season (September 1 to January 31), and construction is slated to begin during this time and active burrows cannot be avoided, an eviction of owls can be conducted to ensure owls move off the site prior to commencement of construction. The eviction process includes the installation of one-way doors that remain in all burrows of suitable size for at least 3 days, monitored by a qualified biologist, and then hand-excavating burrows to ensure no owl remains in the burrow. Once the site is clear of owls, the burrows can be backfilled, after which ground-disturbing construction activity can commence. • In the unlikely event burrowing owls are found onsite, mitigation lands must be purchased to offset the loss of their habitat. The standard mitigation lands required to loss of habitat is 6.5 acres for every pair of owls found onsite. MM BIO-1b: No more than 14 days prior to ground-disturbing activities during the breeding season (February 1 to August 31), a qualified biologist shall perform pre-construction surveys for the Swainson's hawk in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. In accordance with the guidelines, surveys shall occur within a 0.5-mile radius	

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	of the site, and shall involve a minimum of two survey periods. In the event that one or more Swainson’s hawks are observed to be nesting, a work-free buffer area shall be established and monitored by a qualified biologist. The biologist shall have the discretion to determine the appropriate buffer, which may involve consultation with the California Department of Fish and Game, as appropriate. The biologist shall determine when the nest has been vacated, at which point, the work-free buffer area can be removed. MM BIO-1c: Prior to issuance of grading permits, the applicant shall provide documentation to the City of Patterson demonstrating that Swainson’s hawk foraging habitat mitigation has been obtained at a ratio of 0.50 acre for each 1.00 acre of suitable foraging habitat developed. “Suitable foraging habitat” consists of row crops or fallow fields that would be affected by construction activities. Land planted as orchards shall not be treated as suitable foraging habitat pursuant to the guidance in the Mitigation Guidelines for Swainson’s Hawk. The applicant shall mitigate for the loss of Swainson’s hawk foraging habitat through (1) payment of \$600 per acre for offsite preservation of foraging habitat to a resource agency or a third-party organization acceptable to a resource agency or (2) acquisition of an irrevocable instrument (e.g., deed restriction or easement) for preservation of foraging habitat on a property that provides habitat of equal or greater quality. This mitigation measure may be coordinated with Mitigation Measure AG-1. MM BIO-1d: The project applicant shall adhere to the following requirements to avoid or minimize adverse impacts on the San Joaquin kit fox: • No more than 14 days prior to the first ground-disturbing activity, a qualified biologist shall thoroughly walk the project site, as well as a 200-foot buffer around the perimeter of the project site, to locate potential San Joaquin kit fox dens. If no dens are located, no further surveys efforts are required. If dens are located during this survey effort, the status of the dens shall be assessed and the USFWS and CDFG shall be consulted. • All vehicles operating within the construction area shall observe a maximum 20-mph speed limit.	

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	• All ground-disturbing construction activities shall occur during daylight hours. • All excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each work day or shall have escape ramps constructed of earth fill or wooden planks installed. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If an animal is found within these structures, the animal shall be allowed to leave on its own without harm or harassment. • All construction piles, culverts, or similar structures with a diameter of 4 inches or greater that are stored at the construction site shall be thoroughly inspected for animals prior to burial, capping, or moving. If a kit fox is found within any of these structures, the structure shall remain untouched until the kit fox has vacated the structure; if necessary, the USFWS and CDFG shall be consulted. • All food-related trash shall be disposed of in closed containers and removed from the construction site at a minimum of once per week. • Prior to the first ground-disturbing activity, a qualified biologist shall conduct an employee education program for construction personnel. The education program shall include a physical description of the kit fox, methods of impact avoidance, and points of contact should an impact occur or potentially occur. A fact sheet covering all of this information shall be provided to each employee. • The applicant shall establish a point of contact for construction personnel in the event that a kit fox is accidentally injured or killed. • Prior to ground-disturbing activities, the City shall retain a qualified biologist to conduct periodic inspections of the project site during construction to ensure compliance with the above measures. • The CDFG shall be notified immediately and the Sacramento Fish and Wildlife office shall be notified within 3 days if a kit fox is injured or killed. MM BIO-1e: Prior to removal of any trees (including orchard and ornamental) or structures (barns) on the project site, the project applicant shall retain a qualified biologist to conduct presence/absence surveys for bat species. Bats shall not be disturbed during the breeding season	

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	(typically between May and August), or when using a winter hibernaculum (typically between November and February). If bats are found to be present in trees onsite, systematic removal of select tree branches would be required several days prior to the removal of the trees. This work shall be done under the supervision of a qualified biologist. If bats are found to be present in structures, partial removal of the roof shall be required within several days of building demolition. This work shall be conducted under the supervision of a qualified biologist.	
Impact BIO-2: The proposed project may have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game (CDFG) or the United States Fish and Wildlife Service (USFWS).	MM BIO-2: Prior to issuance of grading permits for construction activities that would occur within 100 feet of Del Puerto Creek, the project applicant shall retain a qualified biologist to prepare and submit a Jurisdictional Delineation to the appropriate resource agencies for review and approval. Such agencies may include but are not limited to the United States Army Corps of Engineers, the California Department of Fish and Game, and the Central Valley Regional Water Quality Control Board. Should the approved Jurisdictional Delineation determine that the project would impact regulated resources, the applicant shall obtain the necessary regulatory permits and mitigate impacts through (1) avoidance of the resources; (2) offsite restoration of features of equal or greater value; or (3) purchase of credits at an agency-approved mitigation bank in the region at no less than a 1:1 ratio.	Less than significant impact.
Impact BIO-3: The proposed project may have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	Implement Mitigation Measure BIO-2.	Less than significant impact.
Impact BIO-4: The proposed project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites.	MM BIO-4: Prior to recordation of the final map for the proposed project, the project applicant shall prepare and submit plans to the City of Patterson that demonstrate that physical improvements associated with the proposed project maintain a minimum 100-foot setback from the Del Puerto Creek high water mark, or outside edge of existing riparian vegetation, whichever is greater. Stream crossings are exempt from this setback requirement; however, they must either (1) completely span the creek channel, where	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	feasible; or (2) where a span is not feasible, footings must be located as far away from the creek's low-flow channel as feasible. Utility improvements are also exempt from this setback requirement.	
Impact BIO-5: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1d, BIO-1e, BIO-2, and BIO-4.	Less than significant impact.
Section 3.5 - Cultural Resources		
Impact CUL-1: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered historic resources.	MM CUL-1: If a potentially significant cultural resource is encountered during subsurface earthwork activities for the project, all construction activities within a 50-foot radius of the find shall cease until a qualified archaeologist determines whether the resource requires further study. The applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction shall be evaluated for significance in terms of California Environmental Quality Act criteria by a qualified archaeologist and if significant, recorded on appropriate California Department of Parks and Recreation forms. Potentially significant cultural resources consist of but are not limited to stone, bone, glass, ceramics, fossils, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites. If the resource is determined significant under CEQA, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive report and file it with the appropriate Information Center, and provide for the permanent curation of the recovered materials.	Less than significant impact.
Impact CUL-2: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered archaeological resources.	Implement Mitigation Measure CUL-1.	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact CUL-3: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered paleontological resources.	MM CUL-3: In the event a fossil or fossil formations are discovered during any subsurface construction activities for the proposed project, all excavations within 100 feet of the find shall be temporarily halted until the find is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards. The paleontologist shall notify the City of Patterson, who shall coordinate with the paleontologist concerning any necessary investigation of the find. If the find is determined to be significant under CEQA, the City, based on the recommended mitigation measures of the qualified paleontologist, shall require the applicant to implement those measures, which may include avoidance, preservation in place, or other appropriate measures, as outlined in Public Resources Code Section 21083.2.	Less than significant impact.
Impact CUL-4: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered human remains.	MM CUL-4: In the event of the accidental discovery or recognition of any human remains, all activities must cease within 50 feet of the find and the following procedures shall be implemented, as applicable: 1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the Stanislaus County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains to be Native American, the coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours, and the NAHC shall identify the person or persons it believes to be the “most likely descendant” (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work within 48 hours, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98. 2. Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendant or on the project site in a location not subject to further subsurface disturbance: • The NAHC is unable to identify a most likely descendent or the most	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	likely descendent failed to make a recommendation within 48 hours after being notified by the commission. • The descendant identified fails to make a recommendation. • The landowner or his authorized representative rejects the recommendation of the descendant, and mediation by the NAHC fails to provide measures acceptable to the landowner.	
Section 3.6 - Geology, Soils, and Seismicity		
Impact GEO-1: Development of the proposed project may expose persons or structures to seismic hazards.	MM GEO-1: Prior to the issuance of building permits for each building within the project site, the project applicant shall submit a geotechnical study and building plans to the City of Patterson for review and approval. The design-level geotechnical study shall be prepared by a qualified engineer and shall identify grading and building practices necessary to ensure stable building conditions, including the abatement of expansive soil conditions on the project site. The project applicant shall implement the recommendations of the approved geotechnical study into project plans. The project's building plans shall demonstrate that they incorporate all applicable recommendations of the geotechnical study and comply with all applicable requirements of the latest adopted version of the California Building Standards Code. A licensed professional engineer shall prepare the plans, including those that pertain to soil engineering, structural foundations, pipeline excavation, and installation. The approved plans shall be incorporated into the proposed project. All onsite soil engineering activities shall be conducted under the supervision of a licensed Geotechnical Engineer or Certified Engineering Geologist.	Less than significant impact.
Impact GEO-2: Construction activities associated with the proposed project have the potential to create erosion and sedimentation.	Implement Mitigation Measure HYD-1.	Less than significant impact.
Impact GEO-3: The proposed project may expose persons or structures to hazards associated with unstable geologic units or soils.	Implement Mitigation Measure GEO-1.	Less than significant impact.
Impact GEO-4: Development of the proposed project may expose persons or structures to hazards associated with expansive soils.	Implement Mitigation Measure GEO-1.	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 3.7 - Hazards and Hazardous Materials		
Impact HAZ-1: Development of the proposed project may have the potential to expose human health and the environment to hazardous materials associated with past or present usage of the project site or surrounding land uses.	MM HAZ-1a: Prior to issuance of demolition permits for any structures located on the project site (including the residence and storage structure), the project applicant shall retain a certified hazardous waste contractor to properly remove and dispose of all materials containing asbestos, lead paint, PCBs, mercury and CFCs in accordance with federal and state law. The applicant shall submit documentation to the City of Patterson demonstrating that this contractor has been retained as part of the demolition permit application. Upon completion of removal and disposal, the project applicant shall provide documentation to the City of Patterson demonstrating that these activities were successfully completed. MM HAZ-1b: Prior to issuance of grading permits for any portion of the project site where pesticides or other agricultural chemicals have been applied within the preceding 12 months, the project applicant shall retain a qualified consultant to perform Phase II testing of the project site soils for the presence of residual concentrations of agricultural chemicals. Soils shall be laboratory tested for agricultural chemical residuals in accordance with California Department of Toxic Substances Control (DTSC) guidelines. If the testing yields concentrations in excess of acceptable limits for commercial or light industrial development, the project applicant shall retain a qualified contractor to perform soil remediation in accordance with DTSC guidelines. The soil remediation activities shall be completed prior to grading activities. The applicant shall submit documentation to the City of Patterson demonstrating that soil testing was performed and any necessary remediation was completed as part of the grading permit application. This mitigation measure does not apply in locations where pesticides or other agricultural chemicals have not been applied within the preceding 12 months.	Less than significant impact.
Impact HAZ-2: The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions.	Implement Mitigation Measures HAZ-1a and HYD-1.	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact HAZ-3: The proposed project would not create aviation safety hazards for people residing or working the project area.	No mitigation is necessary.	Less than significant impact.
Impact HAZ-4: The proposed project may interfere with emergency response or evacuation.	MM HAZ-4: Prior to approval of the final map for Phase IV, the project applicant shall prepare and submit plans to the City of Patterson for review and approval demonstrating that the portion of the project site located between the California Aqueduct and Interstate 5 can be served with two points of emergency access in accordance with California Fire Code requirements. The approved plans shall be incorporated into the proposed project.	Less than significant impact.
Section 3.8 - Hydrology and Water Quality		
Impact HYD-1: Construction activities associated with the proposed project have the potential to degrade water quality in downstream water bodies.	MM HYD-1: Prior to the issuance of grading permits or building permits for each phase of the project (whichever occurs first), the project applicant shall prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) to the Central Valley RWQCB that identifies specific actions and Best Management Practices (BMPs) to prevent stormwater pollution during construction activities in accordance with the revised NPDES General Permit for Storm Water Discharges Associated with Construction Activity (Order 2009-0009 DWQ). The City of Patterson shall confirm that the RWQCB has approved the SWPPP prior to issuance of grading or building permits. The SWPPP shall identify a practical sequence for BMP implementation and maintenance, site restoration, contingency measures, responsible parties, and agency contacts. The SWPPP shall include but not be limited to the following elements: • Temporary erosion control measures shall be employed for disturbed areas. • No disturbed surfaces shall be left without erosion control measures in place during the winter and spring months. • Sediment shall be retained onsite by a system of sediment basins, traps, or other appropriate measures. • The construction contractor shall prepare Standard Operating Procedures for the handling of hazardous materials on the construction site to eliminate or reduce discharge of materials to storm drains.	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	• BMP performance and effectiveness shall be determined either by visual means where applicable (e.g., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination (such as inadvertent petroleum release) is required by the RWQCB to determine adequacy of the measure. • In the event of significant construction delays or delays in final landscape installation, native grasses or other appropriate vegetative cover shall be established on the construction site as soon as possible after disturbance, as an interim erosion control measure throughout the wet season.	
Impact HYD-2: Operational activities associated with the proposed project have the potential to degrade water quality in downstream water bodies.	MM HYD-2: Prior to the issuance of building permits for the proposed project, the project applicant shall submit a stormwater quality management plan to the City of Patterson for review and approval. The stormwater quality management plan shall identify Low Impact Development techniques and pollution prevention measures and practices to prevent polluted runoff from leaving the project site. Examples of stormwater pollution prevention measures and practices that may be included in the plan but are not limited to: • Strategically placed bioswales and landscaped areas that promote percolation of runoff • Pervious pavement • Roof drains that discharge to landscaped areas • Trash enclosures with screen walls and roofs • Stenciling on storm drains (e.g., “No Dumping”) • Curb cuts in parking areas to allow runoff to enter landscaped areas • Rock-lined areas along landscaped areas in parking lots • Catch basins • Oil/water separators • Regular sweeping of parking areas and cleaning of storm drainage facilities • Employee training to inform store personnel of stormwater pollution prevention measures	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact HYD-3: The proposed project would not deplete groundwater supplies or substantially interfere with groundwater recharge.	No mitigation is necessary.	Less than significant impact.
Impact HYD-4: The proposed project would increase impervious surface coverage and, therefore, would require new drainage facilities to prevent downstream flooding.	MM HYD-4: Prior to issuance of grading permits for the proposed project, the project applicant shall retain a qualified civil engineer to prepare and submit a detailed drainage plan to the City of Patterson for review and approval. The drainage plan shall demonstrate compliance with City of Patterson standards regarding drainage designs, including sizing basins to accommodate a 50-year, 24-hour storm event. The approved plan shall be incorporated into the project design and final improvement plans.	Less than significant impact.
Impact HYD-5: The proposed project may place structures within a 100-year flood hazard area that may have the potential to divert flood flows or be subjected to flood hazard.	Implement Mitigation Measure BIO-4.	Less than significant impact.
Impact HYD-6: The proposed project may have the potential to substantially degrade water quality.	MM HYD-6a: Prior to any construction activities that would involve work within the California Aqueduct right-of-way, the project applicant shall obtain from the California Department of Water Resources an Encroachment Permit in accordance with the Division of Operations and Maintenance Encroachment Permit Guidelines. Conditions of the Encroachment Permit shall be incorporated into project plans, which may include but may not be limited to installation of water pollution prevention measures along the California Aqueduct (e.g., fencing, full span roadway crossings, and avoidance of runoff discharge into the waterway). MM HYD-6b: Prior to any construction activities that would involve work within the Delta-Mendota Canal right-of-way, the project applicant shall submit project grading, building, and drainage plans to the San Luis & Delta-Mendota Water Authority for review and approval. The project applicant shall incorporate measures into the proposed project that protect the Delta Mendota Canal as recommended by the Water Authority. Such recommendations may include but may not be limited to: • Bridge crossings with public walkways must be designed to prevent unwanted debris from being discharged into the canal. • No roadway drainage shall be allowed to be discharged into the canal.	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	- All roadway crossing support systems shall be full span. - Existing drain inlets shall be plugged. - All storm drainage shall be conveyed either over or under the canal.	
Section 3.9 – Land Use		
Impact LU-1: The proposed project would be consistent with applicable provisions of the City of Patterson General Plan.	No mitigation is necessary.	Less than significant impact.
Impact LU-2: The proposed project would not conflict with any of the applicable provisions of the City of Patterson Municipal Code.	No mitigation is necessary.	Less than significant impact.
Impact LU-3: The proposed project would not conflict with any of the applicable provisions of the Stanislaus County Airport Land Use Commission Plan.	No mitigation is necessary.	Less than significant impact.
Impact LU-4: The proposed project would not conflict with any of the applicable criteria set forth by Stanislaus LAFCO for annexation or Sphere of Influence expansion.	No mitigation is necessary.	Less than significant impact.
Section 3.10 – Noise		
Impact NOI-1: Construction activities associated with the proposed project may expose nearby land uses to excessive noise levels.	No mitigation is necessary.	Less than significant impact.
Impact NOI-2: Construction and operational activities associated with the proposed project would not generate substantial groundborne vibration.	No mitigation is necessary.	Less than significant impact.
Impact NOI-3: The proposed project's vehicular trips would not cause a substantial permanent increase in ambient noise levels.	No mitigation is necessary.	Less than significant impact.
Impact NOI-4: The proposed project would not generate non-transportation noise levels that cause significant impacts at nearby receptors.	No mitigation is necessary.	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact NOI-5: The proposed project may generate combined transportation and non-transportation noise levels that cause significant impacts at nearby receptors.	No feasible mitigation is available.	Significant unavoidable impact.
Impact NOI-6: The proposed project would not expose onsite sensitive receptors to noise levels that cause significant impacts.	MM NOI-6: Prior to issuance of building permits for any office buildings that would be located within 500 feet of Interstate 5 or Rogers Road, the project applicant shall submit plans to the City of Patterson for review and approval demonstrating that any outdoor uses (e.g., seating areas) are located on the side of the building that is shielded from the roadway. The approved plans shall be incorporated into the proposed project.	Less than significant impact.
Impact NOI-7: The proposed project would not expose persons working or residing in the project vicinity to excessive aviation noise levels.	No mitigation is necessary.	Less than significant impact.
Section 3.11 – Population and Housing		
Impact POP-1: The project would not induce substantial population growth in the area.	No mitigation is necessary.	Less than significant impact.
Impact POP-2: The project would not displace significant numbers of persons or housing such that new housing would need to be constructed.	No mitigation is necessary.	Less than significant impact.
Section 3.12 – Public Services and Utilities		
Impact PSU-1: The proposed project may result in a need for new or expanded fire protection facilities that would have physical impacts on the environment.	Implement Mitigation Measures HAZ-4 and TRANS-1a and: MM PSU-1: Prior to recordation of the final map for the Arambel Business Park for where the new fire station would be located, the project applicant shall make an irrevocable dedication offer to the City of Patterson for a new fire station site. The fire station site shall provide the minimum amount of acreage necessary to meet industry standards for a fire station site. The terms of the dedication shall be negotiated as part of the Development Agreement. Should the City of Patterson elect to develop the new fire station at another location, the applicant shall have the ability to retain the acreage for private use. The Community Facility District or similar financing mechanism would fund construction of the fire station.	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact PSU-2: The proposed project may contribute to a need for new or expanded police protection facilities that would have physical impacts on the environment.	MM PSU-2: Prior to the issuance of the certificate of occupancy for each project building, the project applicant shall consult with the Patterson Police Department regarding appropriate security measures. Such measures may include video surveillance systems, fencing, lighting, onsite security personnel, parking lot patrols, or other appropriate measures. The mutually agreed upon measures shall be incorporated into the plans for each building.	Less than significant impact.
Impact PSU-3: The proposed project would increase water demand and, therefore, may require additional entitlements and supplies.	Implement Mitigation Measure TRANS-1a and: MM PSU-3: Prior to the issuance of building permits for each project building, the project applicant shall submit plans to the City of Patterson for review and approval that demonstrate that applicable water conservation Best Management Practices have been incorporated into project design and landscaping. Examples of Best Management Practices include but are not limited to low-water-use fixtures (e.g., restroom sinks, urinals, and toilets) and water-conserving landscaping (e.g., drought-tolerant species). The approved plans shall be incorporated into the proposed project.	Less than significant impact.
Impact PSU-4: The proposed project may require the expansion of wastewater treatment capacity.	MM PSU-4: Prior to issuance of building permits for each project building, the applicant shall do one of the following: 1) Prepare and submit improvement plans demonstrating that the proposed use(s) would connect to the City of Patterson’s municipal wastewater collection and treatment system. The applicant must obtain confirmation that adequate collection and treatment capacity exist to serve the proposed use(s). The applicant shall provide fair-share fees to the City of Patterson for wastewater treatment system improvements through participation in a Community Facilities District or other financing mechanism. 2) Prepare and submit improvement plans demonstrating that the proposed use(s) would connect to a privately owned and operated onsite wastewater treatment plant. The applicant must obtain confirmation that adequate collection and treatment capacity exist to serve the proposed use(s). The treatment plant must be fully permitted by the state and County of Stanislaus prior to occupancy of the uses. The project applicant is responsible for the full cost of construction and operation of the onsite wastewater treatment plant.	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact PSU-5: The proposed project may require the construction of new downstream drainage facilities.	Implement Mitigation Measure HYD-4 and Mitigation Measure TRANS-1a.	Less than significant impact.
Impact PSU-6: The proposed project may generate substantial amounts of solid waste during both construction and operations, which would need to be accommodated by a landfill with sufficient permitted capacity.	MM PSU-6a: Prior to issuance of building permits, the project applicant shall retain a qualified contractor to perform construction debris recycling. The applicant shall establish an objective of diverting a minimum of 50 percent of construction debris from the waste stream. The project applicant shall provide documentation to the satisfaction of the City of Patterson demonstrating that construction and demolition debris was recycled. MM PSU-6b: Prior to the issuance of final certificates of occupancy for each building developed within the West Patterson Business Park Expansion, the project applicant shall provide information to the City of Patterson describing the methods by which recycling and waste diversion activities shall be achieved. This information shall include but is not limited to the type and location of facilities necessary to collect and store recyclable materials, contractors who would pick-up recyclable and reusable materials, and how recycling and waste diversion activities would be integrated into operational practices. To the extent feasible, centralized recycling facilities within each use are encouraged to enhance the ease and efficiency of such practices.	Less than significant impact.
Impact PSU-7: The proposed project would not result in the inefficient, wasteful, or unnecessary use of energy.	No mitigation is necessary.	Less than significant impact.
Section 3.13 - Transportation		
Impact TRANS-1: The proposed project may contribute to unacceptable traffic operations under Existing Plus Phase I conditions.	MM TRANS-1a: Prior to recordation of the first final map, the project applicant and the City of Patterson shall establish a Community Facilities District or other financing mechanism to fund transportation improvements. Applicants that pursue development in accordance with the Master Development Plan shall contribute a fair share of the costs of necessary improvements at the time building permits are sought through participation in the Community Facilities District or other financing mechanism. MM TRANS-1b: At the time of 5 percent of Phase I buildout, the intersection of Sperry Avenue/I-5 Southbound Ramps shall be signalized.	Significant unavoidable impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	At the time of 80 percent of Phase I buildout, left-turn lanes shall be added to the southbound and westbound approaches. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-1c: At the time of 5 percent of Phase I buildout, the intersection of Sperry Avenue/I-5 Northbound Ramps shall be signalized and the signal operation shall be coordinated with the signal at the Sperry Avenue/I-5 Southbound Ramps intersection. At the time of 80 percent of Phase I buildout, the following improvements shall be implemented: (1) Install a left-turn lane on the eastbound approach, (2) install a right-turn lane on the westbound approach, and (3) install a right-turn lane on the northbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-1d: At the time of 50 percent of Phase I buildout, the intersection of Rogers Road/State Route 33 shall be signalized. This improvement shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-1e: At the time of 8 percent of Phase I buildout, the intersection of Sycamore Avenue/East Las Palmas Avenue shall be signalized. This improvement shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-1f: At the time of 10 percent of Phase I buildout, intersection of East Las Palmas Avenue/Poplar Avenue shall be signalized. At the time of 60 percent of Phase I buildout, a right-turn lane shall be installed on the westbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-1g: At the time of 30 percent of Phase I buildout, intersection of West Main Avenue/Carpenter Road shall be signalized. At	

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	the time of 60 percent of Phase I buildout, the following improvements shall be implemented: (1) install a left-turn lane on the eastbound approach, and (2) install a left-turn lane on the westbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-1h: At the time of 20 percent of Phase I buildout, intersection of West Main Avenue/Crows Landing Road shall be signalized. At the time of 60 percent of Phase I buildout, the following improvements shall be implemented: (1) install a left-turn lane on the eastbound approach, and (2) install a left-turn lane on the westbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-1i: When intersection operations approach unacceptable levels, but not later than 50 percent buildout of Phase I, the intersection of Rogers Road/North-South Internal Roadway shall be signalized. This improvement shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.	
Impact TRANS-2: The proposed project would contribute to unacceptable traffic operations under 2035 Cumulative conditions.	MM TRANS-2a: When intersection operations approach unacceptable levels, the intersection of Sperry Avenue/Rogers Road shall be improved. The improvements shall consist of (1) installing a through and right-turn lane on the eastbound approach; (2) installing two left-turn lanes, a through lane, and two right-turn lanes on the westbound approach; (3) installing a left-turn lane, a through lane, and a right-turn lane on the northbound approach; and (4) installing a through lane on the southbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-2b: When intersection operations approach unacceptable levels, the intersection of Sperry Avenue/Baldwin Road shall be improved. The improvements shall consist of (1) signalizing the intersection; (2)	Significant unavoidable impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	installing a left-turn and a right-turn lane on the eastbound approach; (3) installing a left-turn, a through lane, and two right-turn lanes on the westbound approach; (4) installing two left-turn lanes on the northbound approach; and (5) installing two left-turn lanes on the southbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-2c: When intersection operations approach unacceptable levels, the intersection of Sperry Avenue/Ward Avenue shall be improved. The improvements shall consist of (1) installing a left-turn lane on the eastbound approach, (2) installing a left-turn lane on the northbound approach, and (3) installing a right-turn lane on the southbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-2d: When intersection operations approach unacceptable levels, the intersection of Sperry Avenue/S. Del Puerto Avenue shall be improved. The improvements shall consist of (1) installing a left-turn lane on the eastbound approach and (2) installing a left-turn lane on the westbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-2e: In the event that the intersection of Sperry Avenue/State Route 33 has not been signalized at the time of issuance for the first certificate of occupancy for Phase II of the proposed project, the intersection shall be signalized. This improvement shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. This mitigation measure shall not apply if the intersection is signalized prior to issuance for the first certificate of occupancy for Phase II of the proposed project. MM TRANS-2f: When intersection operations approach unacceptable levels, the intersection of Ward Avenue/American Eagle Drive shall be improved. The improvements shall consist of installing a right turn lane on	

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	the southbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-2g: When intersection operations approach unacceptable levels, the intersection of Ward Avenue/SR-33 shall be improved. The improvements shall consist of (1) signalizing the intersection and (2) installing a left-turn lane on the northbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-2h: When intersection operations approach unacceptable levels, the intersection of Zacharias Road/SR-33 shall be improved. The improvements shall consist of (1) signalizing the intersection, (2) installing two left-turn lanes on the northbound approach, and (3) installing a right-turn lane on the eastbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-2i: When intersection operations approach unacceptable levels, the intersection of Baldwin Road/SR-33 shall be improved. The improvements shall consist of (1) signalizing the intersection, (2) installing a left-turn lane on the northbound approach, and (3) installing a right-turn lane on the southbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-2j: When intersection operations approach unacceptable levels, the intersection of Rogers Road/SR-33 shall be improved. The improvements shall consist of (1) signalizing the intersection and (2) installing a left-turn lane on the northbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-2k: When intersection operations approach unacceptable levels, the intersection of SR-33/Eucalyptus Avenue shall be improved.	

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	The improvements shall consist of (1) installing a left-turn and a through lane on the southbound approach and (2) installing a through lane on the northbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-2l: When intersection operations approach unacceptable levels, the intersection of Olive Avenue/SR-33 shall be improved. The improvements shall consist of (1) signalizing the intersection, (2) installing a left-turn lane on the eastbound approach, (3) installing a left-turn lane on the westbound approach, (4) installing a left-turn lane on the northbound approach, and (5) installing a left-turn lane on the southbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-2m: When intersection operations approach unacceptable levels, the intersection of Walnut Avenue/Sycamore Avenue shall be improved. The improvements shall consist of signalizing the intersection. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-2n: When intersection operations approach unacceptable levels, but not later than issuance of the first certificate of occupancy for Phase III of the proposed project, the intersection of Rogers Road/Keystone Pacific Parkway shall be improved. The improvements shall consist of signalizing the intersection. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. MM TRANS-2o: When intersection operations approach unacceptable levels, but not later than issuance of first certificate of occupancy for Phase IV of the proposed project, the intersection of Zacharias Road/Rogers Road shall be improved. The improvements shall consist of signalizing the intersection. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.	

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	MM TRANS-2p: Prior to issuance of building permits for each project building, the project applicant shall provide fair-share fees for the planned I-5/Zacharias Road interchange, if this improvement is programmed into an adopted fee program. This mitigation measure does not apply if the improvement is not programmed into an adopted fee program at the time building permits are sought. This mitigation measure shall not apply if the planned I-5/Zacharias Road interchange is programmed in the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.	
Impact TRANS-3: The proposed project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.	No mitigation is necessary.	Less than significant impact.
Impact TRANS-4: The proposed project would not substantially increase hazards due to a design feature or incompatible uses.	No mitigation is necessary.	Less than significant impact.
Impact TRANS-5: The proposed project may result in inadequate emergency access.	Implement Mitigation Measure HAZ-4.	Less than significant impact.
Impact TRANS-6: The proposed project may conflict with adopted policies, plans, or programs supporting alternative transportation.	MM TRANS-6: Prior to issuance of the first certificate of occupancy for each project use, the applicant shall prepare and submit documentation to the City of Patterson demonstrating that feasible Transportation Demand Management measures have been incorporated. The documentation shall either (1) show how at least one or more of the following Transportation Demand Management measures has been integrated into the use or (2) explain why such a measure is not feasible (such as workforce characteristics, facility operational characteristics, health and safety, etc.): • Pedestrian facilities (e.g., internal pedestrian facilities that provide connectivity to sidewalks or nearby land uses) • End-of-trip bicycle facilities (e.g., racks, lockers, changing/locker rooms, shower facilities) • Alternative (flex-time) work schedules that allow non-peak travel by employees	Less than significant impact.

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

Impacts	Mitigation Measures	Level of Significance After Mitigation
	• Commute Trip Reduction Programs that provide incentives for employees to carpool, use transit, ride bicycles, or use other modes of non-single-occupant vehicle transportation. • Multi-Modal Transportation Guides that provide information to employees regarding various routes to a particular location via different modes of transportation • The establishment of a Transportation Management Association for a large employer or a group of employers. The association would provide transportation (e.g., employee shuttles) for employees of companies that participate in the organization. • Telecommute (or work-from-home) options for employees who can work remotely. • Any other Transportation Demand Management measure not specified on this list.	

SECTION 1: INTRODUCTION

1.1 - Overview of the CEQA Process

This Draft Environmental Impact Report (Draft EIR) is prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the implementation of the West Patterson Business Park Expansion Project (State Clearinghouse No. 2011082016). This document is prepared in conformance with CEQA (California Public Resources Code, Section 21000, et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000, et seq.). This Draft EIR is intended to serve as an informational document for the public agency decision makers and the public regarding the proposed project.

1.1.1 - Overview

The proposed project consists of the development of approximately 13.47 million square feet of light industrial, business park, and general commercial uses and associated infrastructure on approximately 1,119 gross acres (880 net acres). The proposed project would represent the westerly expansion of the existing, fully entitled and partially developed West Patterson Business Park and consist of two components: Arambel Business Park and the KDN Retail Center/Business Park. Section 2, Project Description provides a complete description of the project.

1.1.2 - Purpose and Authority

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

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

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

- Growth-Inducing Impacts
- Effects Found Not To Be Significant
- Areas of Known Controversy

1.1.3 - Lead Agency Determination

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

This Draft EIR was prepared by Michael Brandman Associates, an environmental consultant. Prior to public review, it was extensively reviewed and evaluated by the City of Patterson. This Draft EIR reflects the independent judgment and analysis of the City of Patterson as required by CEQA. Lists of organizations and persons consulted and the report preparation personnel are provided in Sections 8 and 9 of this Draft EIR, respectively.

1.2 - Scope of the EIR

This Draft EIR addresses the potential environmental effects of the proposed project. The City of Patterson issued an original Notice of Preparation (NOP) for the proposed project on August 4, 2011, which circulated between August 4, 2011 and September 6, 2011 for the statutory 30-day public review period. The original NOP is contained in Appendix A of this Draft EIR.

Following release of the original NOP, the applicant revised the project plans to add approximately 1.72 million square feet. As such, the City of Patterson determined that an Amended NOP needed to be issued. An Amended NOP was issued on March 22, 2012, which circulated between March 22, 2012 and April 23, 2012 for the statutory 30-day public review period. The Amended NOP is contained in Appendix A of this Draft EIR.

The scope of this Draft EIR includes the potential environmental impacts identified in the original NOP and Amended NOP and issues raised by agencies and the public in response to the NOPs.

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

Table 1-1: NOP Comment Letters

NOP	Status	Affiliation	Signatory	Date
Original NOP	Public Agencies	Regional Water Quality Control Board, Central Valley Region	Genevieve Sparks, Environmental Scientist	August 19, 2011
		California Department of Transportation, Division of Aeronautics	Phillip Crimmins, Aviation Environmental Specialist	August 20, 2011
		Stanislaus Local Agency Formation Commission	Marjorie Blom, Executive Officer	August 22, 2011
		San Joaquin Valley Air Pollution Control District	David Warner, Director of Permit Services; Arnaud Marjollet, Permit Services Manager	August 31, 2011
		Del Puerto Water District	William Harrison, General Manager	September 2, 2011
		California Department of Transportation, District 10	Tom Dumas, Chief – Office of Intermodal Planning	September 6, 2011
		San Luis & Delta-Mendota Water Authority	Jaime McNeil	September 6, 2011
		Stanislaus Council of Governments	Charles Turner, Associate Planner	September 6, 2011
		West Stanislaus County Fire Protection District	Richard Gaiser, Special Projects Coordinator	September 6, 2011
		California Department of Water Resources	David Samson, Chief – State Water Project Operations Support Office	[No Date]
	Private Parties	Manatt, Phelps, & Phillips, LLC (on behalf of Villa Del Lago Associates, LLC and Patterson Hotel Associates, LLC)	Kristina Lawson	September 6, 2011
Amended NOP	Public Agencies	Native American Heritage Commission	Dave Singleton, Program Analyst	April 6, 2012
		San Joaquin Valley Air Pollution Control District	David Warner, Director of Permit Services; Arnaud Marjollet, Permit Services Manager	April 9, 2012
		Stanislaus Local Agency Formation Commission	Sara Lytle-Pinhey, Assistant Executive Officer	April 12, 2012
		Stanislaus Council of Governments	Charles Turner, Associate Planner	April 18, 2012

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

NOP	Status	Affiliation	Signatory	Date
Amended NOP (<i>cont.</i>)	Public Agencies (<i>cont.</i>)	Turlock Irrigation District	Todd Troglin, Supervising Engineering Technician	April 19, 2012
		Del Puerto Water District	William Harrison, General Manager	April 23, 2012
		California Department of Transportation, District 10	Tom Dumas, Chief – Office of Intermodal Planning	April 23, 2012
	Private Parties	JB Anderson Land Use Planning (on behalf of the Del Puerto Health Care District)	John Anderson, Principal	April 9, 2012
		Manatt, Phelps, & Phillips, LLC (on behalf of Villa Del Lago Associates, LLC and Patterson Hotel Associates, LLC)	Kristina Lawson	April 23, 2012
Source: City of Patterson, 2012.				

1.2.1 - Scoping Meeting

Pursuant to CEQA Guidelines Section 15082(c)(1), the City of Patterson held a public scoping meeting for the proposed project on Wednesday, August 31, 2011 at Patterson City Hall. Approximately 10 persons attended the meeting. The sign-in sheet is provided in Appendix A. No comments were received on the scope of the EIR at the meeting.

1.2.2 - Environmental Issues Determined Not To Be Significant

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

- Mineral Resources
- Recreation

In addition, certain subjects with various topical areas were determined not to be significant and are addressed in Section 7, Effects Found Not To Be Significant:

- Conversion of Forestland (Section 3.2, Agricultural Resources)
- Conflicts with Forest Zoning (Section 3.2, Agricultural Resources)
- Conservation Plans (Section 3.4, Biological Resources)
- Septic and Alternative Wastewater Systems (Section 3.6, Geology, Soils, and Seismicity)
- Exposure of Schools to Hazardous Materials (Section 3.7, Hazards and Hazardous Materials)
- Private Airstrips (Section 3.7, Hazards and Hazardous Materials)

- Wildland Fires (Section 3.7, Hazards and Hazardous Materials)
- Levee or Dam Failure (Section 3.8, Hydrology and Water Quality)
- Seiches, Tsunamis, and Mudflows (Section 3.8, Hydrology and Water Quality)
- Division of an Established Community (Section 3.9, Land Use)
- Conservation Plans (Section 3.9, Land Use)
- Schools (Section 3.12, Public Services and Utilities)
- Parks (Section 3.12, Public Services and Utilities)
- Other Public Facilities (Section 3.12, Public Services and Utilities)

Potentially Significant Environmental Issues

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

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

1.3 - Organization of the EIR

This Draft EIR is organized into the following main sections:

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

mitigation measures, and significance after mitigation. The specific environmental topics that are addressed within Section 3 are as follows:

- **Section 3.1 - Aesthetics, Light, and Glare:** Addresses the potential visual impacts of development intensification and the overall increase in illumination produced by the project.
- **Section 3.2 – Agricultural Resources:** Addresses the potential conversion of Important Farmland to non-agricultural use, as well as conflicts with Williamson Act contracts and agricultural zoning.
- **Section 3.3 - Air Quality and Greenhouse Gases:** Addresses the potential air quality impacts associated with project implementation, as well as consistency with the San Joaquin Valley Air Pollution Control District’s applicable air quality plans. In addition, the section evaluates project emissions of greenhouse gases.
- **Section 3.4 - Biological Resources:** Addresses the project’s potential impacts on habitat, vegetation, and wildlife; the potential degradation or elimination of important habitat; and impacts on listed, proposed, and candidate threatened and endangered species.
- **Section 3.5 - Cultural Resources:** Addresses the potential impacts of project development on known historical resources and potential archaeological and paleontological resources.
- **Section 3.6 - Geology, Soils, and Seismicity:** Addresses the potential impacts the project may have on soils and assesses the effects of project development in relation to geologic and seismic conditions.
- **Section 3.7 - Hazards and Hazardous Materials:** Addresses the potential for the presence of hazardous materials or conditions on the project site and in the project area that may have the potential to impact human health.
- **Section 3.8: Hydrology and Water Quality:** Addresses the potential for degradation of water quality, impacts on groundwater, and potential flooding issues from project-related runoff.
- **Section 3.9 - Land Use:** Addresses the potential land use impacts associated with consistency with the City of Patterson General Plan, Patterson Municipal Code, and the Stanislaus County Airport Land Use Commission Plan.
- **Section 3.10 - Noise:** Addresses the potential noise impacts during construction and at project buildout from mobile and stationary sources. The section also addresses the impact of noise generation on neighboring uses.
- **Section 3.11 – Population and Housing:** Addresses the potential for growth inducement and displacement of persons or housing.
- **Section 3.12 – Public Services and Utilities:** Addresses the potential impacts upon service providers, including fire protection, law enforcement, water supply, wastewater, storm drainage, solid waste, and energy providers.
- **Section 3.13 - Transportation:** Addresses the impacts on the local and regional roadway system, public transportation, bicycle, and pedestrian access.

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

1.4 - Documents Incorporated by Reference

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

- City of Patterson General Plan
- City of Patterson General Plan EIR
- Patterson Municipal Code
- City of Patterson Urban Water Management Plan
- Stanislaus County General Plan
- Stanislaus County Airports Land Use Commission Plan

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

1.5 - Documents Prepared for the Project

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

- Land Evaluation and Site Assessment Model, prepared by Michael Brandman Associates (Appendix B)
- Air Quality Analysis, prepared by Michael Brandman Associates. (The analysis is wholly contained in Section 3.3, Air Quality and Greenhouse Gases; modeling data is provided in Appendix C.)
- Health Risk Assessment, prepared by Michael Brandman Associates (Appendix C)
- Biological Resources Analysis, prepared by Michael Brandman Associates. (The analysis is wholly contained in Section 3.4, Biological Resources; supporting data is provided in Appendix D.)
- Phase I Cultural Resources Assessment, prepared by Michael Brandman Associates (Appendix E)
- Noise Analysis, prepared by Michael Brandman Associates. (The analysis is wholly contained in Section 3.10, Noise; modeling data is provided in Appendix F.)
- Water Supply Assessment, prepared by the City of Patterson (Appendix H)
- Transportation Impact Study, prepared by TJKM (Appendix I)

1.6 - Review of the Draft EIR

Upon completion of the Draft EIR, the City of Patterson filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the public review period (Public Resources Code, Section 21161). Concurrent with the NOC, this Draft EIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with Public Resources Code 21092(b)(3). A Notice of Availability was provided to public agencies and interested parties pursuant to CEQA Guidelines Sections 15085, 15087(c). During the public review period, the Draft EIR, including the technical appendices, is available for review at the City of Patterson offices and the Stanislaus County Library Patterson Branch. The address for each location is provided below:

City of Patterson
Community Development Department
1 Plaza
Patterson, CA 95363
Hours:
Monday – Friday: 8 a.m. to 5 p.m.

Stanislaus County Library, Patterson Branch
46 North Salado Avenue
Patterson, CA 95363
Hours:
Monday, Tuesday, 10 a.m. to 6 p.m.
Wednesday, 10 a.m. to 8 p.m.
Friday, 10 a.m. to 5 p.m.
Saturday, 12 p.m. to 5 p.m.

The Draft EIR is also posted in electronic form on the City of Patterson's website:
<http://www.ci.patterson.ca.us/>.

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

Mr. Joel Andrews, City Planner
City of Patterson
Community Development Department
1 Plaza
Patterson, CA 95363
Phone: (209) 895-8020
Fax: (209) 895-8019
Email: jandrews@ci.patterson.ca.us

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

SECTION 2: PROJECT DESCRIPTION

This Environmental Impact Report (EIR) analyzes the potential environmental effects of the proposed West Patterson Business Park Expansion Project in Patterson, California.

2.1 - Project Location and Setting

2.1.1 - Location

The project site is located in unincorporated Stanislaus County, California, adjacent to the City of Patterson (Exhibit 2-1). The project site consists of 26 parcels totaling 1,119 gross acres¹. The triangular-shaped project site is bounded by Interstate 5 (I-5) and the California Aqueduct (west and south), Zacharias Road (north), and Rogers Road and Villa del Lago highway commercial center (east) (Exhibit 2-2). The project site is located on the Patterson, California, United States Geological Survey 7.5-minute topographic quadrangle map, Township 5 South, Range 7 East, Section 9 (Latitude 37°29'00" North; Longitude 121°11'00" West).

2.1.2 - Existing Conditions

City of Patterson

The City of Patterson, population 20,560, is located in western Stanislaus County along the I-5 corridor. The Patterson area is characterized by cultivated agricultural uses (orchards and row crops) and the rugged foothills of the Diablo range. Patterson has experienced substantial growth during the past 15 years, doubling in population between 2000 and 2012.

Project Site

The project site contains cultivated agricultural land uses planted as orchards and row crops. The California Aqueduct and the Delta-Mendota Canal traverse the project site in a northwest-southeast direction. Del Puerto Creek crosses the northwestern portion of the project site. A single-family residence and a cluster of agricultural structures are located in the center of the site, adjacent to the Delta-Mendota Canal. Paved and unpaved roads provide circulation within the project site. The project site contains gently sloping relief that ranges from approximately 160 feet above mean sea level in the northeast corner to approximately 220 feet above mean sea level in the southern portion of the site. The California Aqueduct sits upon a raised embankment that is approximately 20 to 60 feet higher than the rest of the site. Exhibit 2-3a and Exhibit 2-3b provide photographs of the project site.

A high-voltage power line parallels the west side of the California Aqueduct. Another high-voltage power line connects this line with the Turlock Irrigation District (TID) substation located along Rogers Road. Overhead utility lines are located along Rogers Road and Zacharias Road.

A 1.3-million-gallon water storage tank (Gateway Tank Site) is located in the southern portion of the project site near the California Aqueduct.

¹ This gross acreage figure includes the area occupied by the California Aqueduct and Delta-Mendota Canal, which totals approximately 169 acres.

Two of the 26 parcels that comprise the project site are encumbered by active Williamson Act contracts. The two contracts expire on December 31, 2012 and December 31, 2014, respectively. Table 2-1 summarizes the status of the two Williamson Act contracts.

Table 2-1: Williamson Act Contract Summary

Assessor's Parcel No.	Acres	Expiration Date
021-025-020	10.86	Dec. 31, 2014
021-025-026	19.55	Dec. 31, 2012
Source: GDR Engineering, 2012; County of Stanislaus, 2012.		

2.1.3 - Surrounding Land Uses

West and South

I-5 and the California Aqueduct form the western and southern boundary of the project site. The freeway sits upon atop a raised embankment that ranges from 80 to 160 feet above the elevation of the project site, while the aqueduct sits atop a raised embankment that ranges from 20 to 60 feet above the elevation of most of the project site. The Diablo Range foothills are located west of the freeway.

North

Zacharias Road forms the northern boundary of the project site. North of the roadway are orchards. Reaches of the California Aqueduct, Delta-Mendota Canal, and Del Puerto Creek extend north of the project site.

East

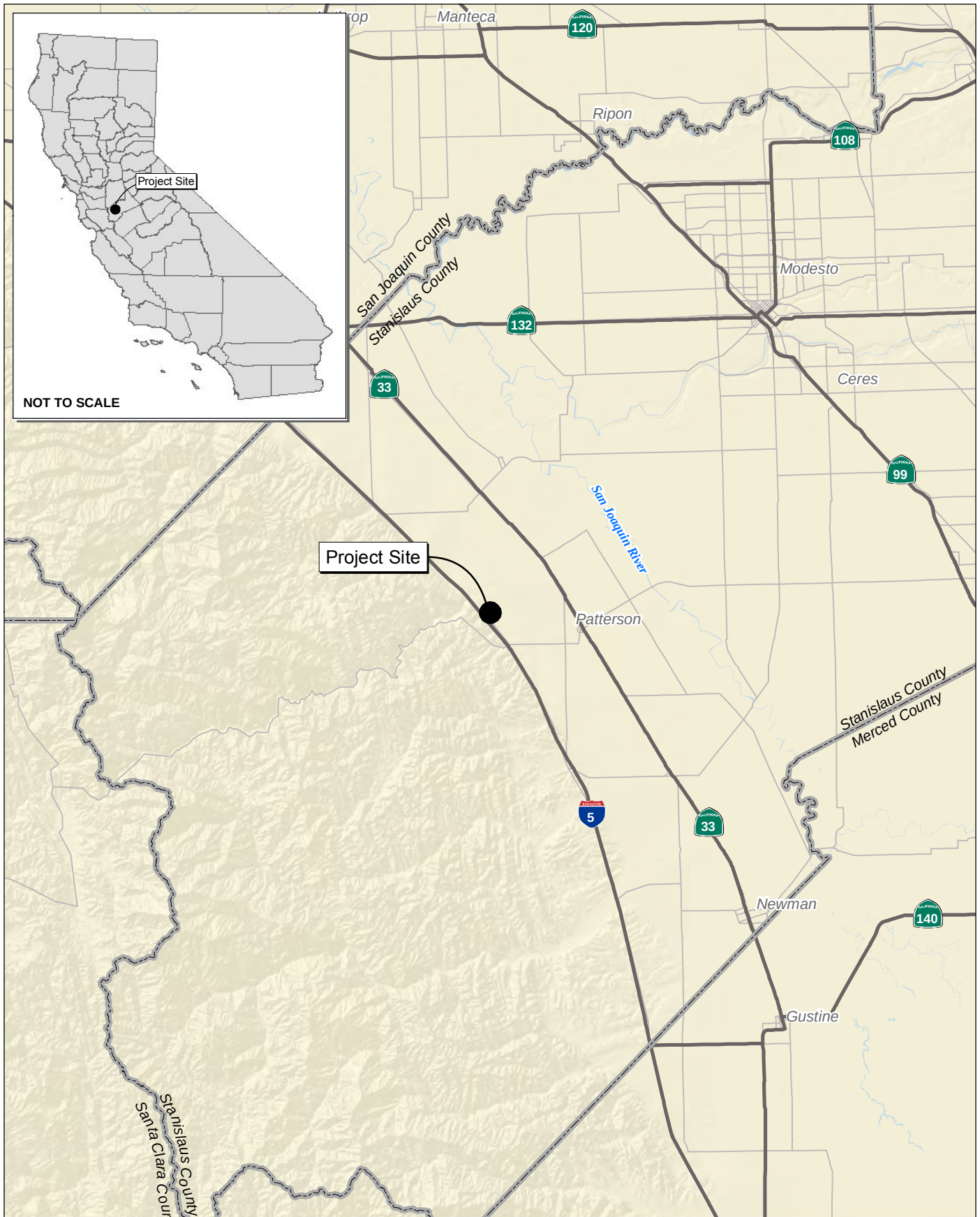
Rogers Road and the Villa del Lago highway commercial center form the eastern boundary of the project site. Land uses east of Rogers Road consist of orchards, row crops, and distribution centers associated with the existing West Patterson Business Park. The Villa del Lago highway commercial center is located south of the Delta-Mendota Canal and primarily consists of visitor-serving commercial uses including hotels, gas stations, restaurants, and a recreational vehicle park.

On the west side of Rogers Road, but not a part of the project site, is an approximately 3-acre Turlock Irrigation District electrical substation.

2.1.4 - Land Use Designations

The County of Stanislaus General Plan designates the project site "Agriculture" and the Stanislaus County Zoning Ordinance zones the site "General Agriculture – 40 Acre Minimum (A-2-40)."

The City of Patterson General Plan designates the project site "Light Industrial" and "General Commercial." The City's land use designations are non-binding because the project site is currently located in unincorporated Stanislaus County. The General Plan land use designations are shown in Exhibit 2-4. The project site is currently located outside of the City of Patterson's Sphere of Influence.



Source: Census 2000 Data, The CaSIL, MBA GIS 2011.



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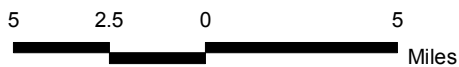
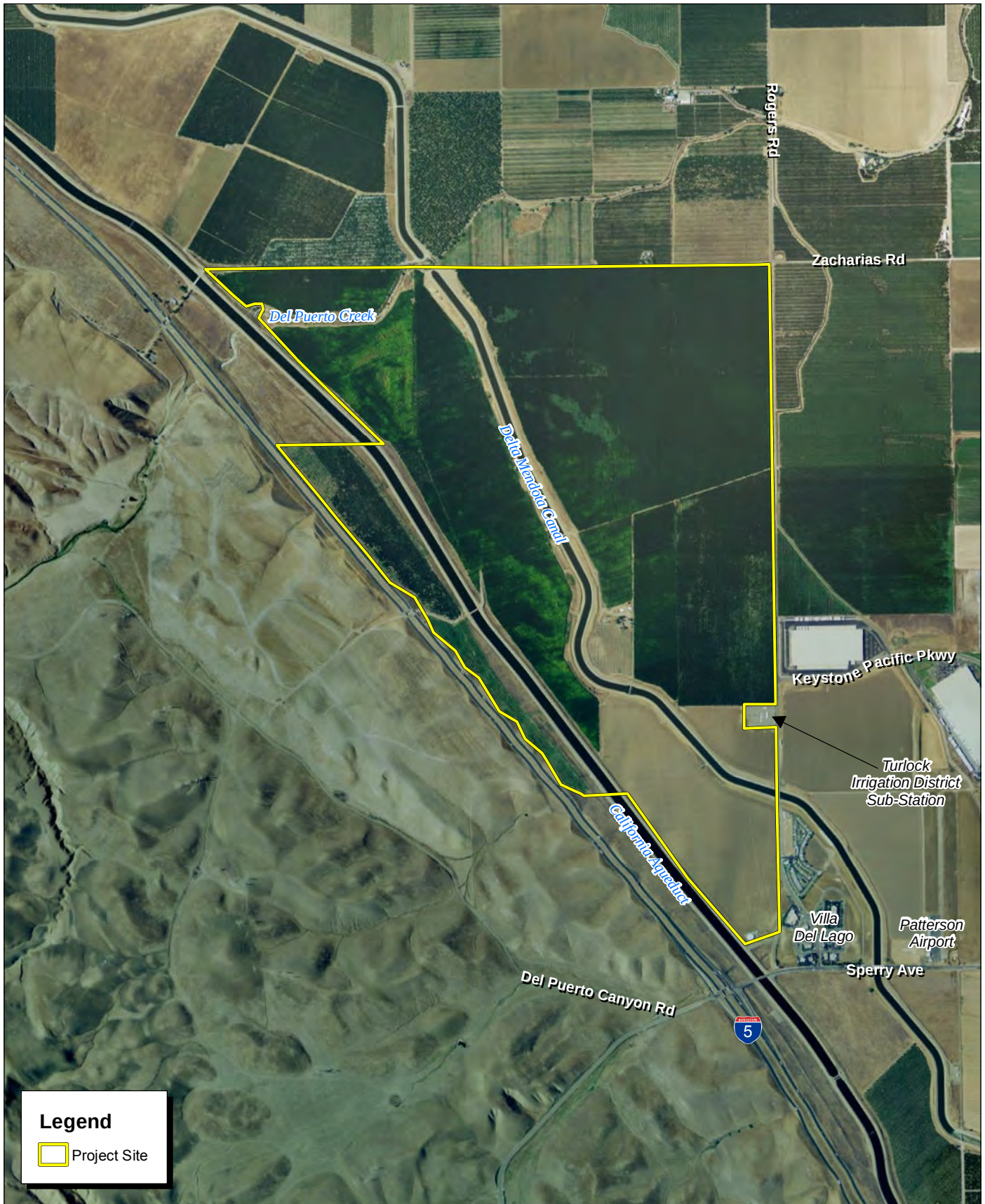


Exhibit 2-1 Regional Location Map



Source: ESRI Aerial Imagery



Michael Brandman Associates

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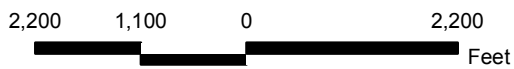


Exhibit 2-2 Local Vicinity Map Aerial Base



Photograph 1: View of Arambel portion of the project site looking east from northwest corner.



Photograph 2: View of the California Aqueduct looking south.



Photograph 3: View of Del Puerto Creek looking west.



Photograph 4: View of the Arambel agricultural operations staging area near Zacharias Road.

Source: Michael Brandman Associates, 2011.



Michael Brandman Associates

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Exhibit 2-3a Site Photographs

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



Photograph 1: View of KDN portion of the project site looking east.



Photograph 2: View of the Delta-Mendota Canal looking south.



Photograph 3: View of Rogers Road crossing of the Delta-Mendota Canal.



Photograph 4: View of KDN portion of the project site looking west.

Source: Michael Brandman Associates, 2011.

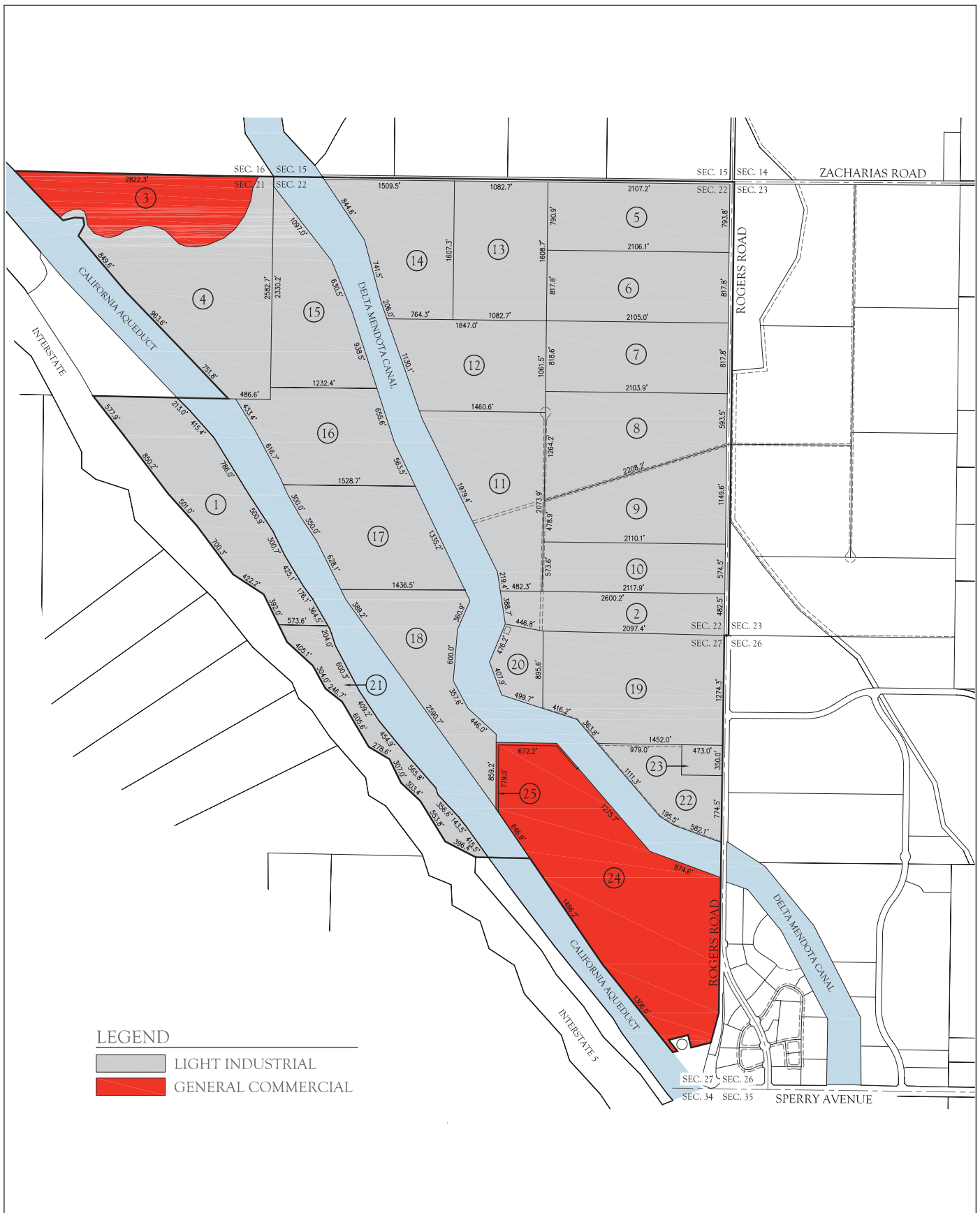


Michael Brandman Associates

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Exhibit 2-3b Site Photographs

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



Source: City of Patterson, General Plan, April 2011.



Michael Brandman Associates

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Exhibit 2-4 General Plan Land Use Designations

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Most of the project site is located within Conditions Area 4 (Other Land Within the Airport Planning Boundary) of the Patterson Airport Land Use Planning Area, as set forth in the Stanislaus County Airport Land Use Commission Plan. Conditions Area 4 is the least stringent airport land use compatibility zone, with nearly all land use and development activities classified as “Compatible.”

2.2 - Project History

In 1999, Stanislaus County commissioned the “I-5 Corridor Industrial/Business Park Feasibility Study” to identify feasible sites for business park development along the I-5 corridor within the western portion of the county. The study identified a location near the I-5/Sperry Avenue interchange as the preferred site for business park development. At the time, the site was located in unincorporated Stanislaus County west of the Patterson city limits.

In 2003, the Patterson City Council approved the entitlements associated with the 820-acre West Patterson Business Park located between Rogers Road and Baldwin Road. Following the issuance of these entitlements, the Stanislaus County Local Agency Formation Commission (LAFCO) approved annexation of the West Patterson Business Park site into the City of Patterson. In 2005, the Patterson City Council, acting as the West Patterson Financing Authority, established Community Facilities District No. 2005-01 (West Patterson Business Park) to fund public infrastructure improvements associated with the business park.

The Keystone Pacific Business Park occupies approximately 225 acres of the northern portion of the West Patterson Business Park and was the first portion of the business park to break ground. Uses within the Keystone Pacific Business Park include distribution centers for CVS, Grainger, and Kohl’s, and the Del Puerto Health Center.

Other approved but not yet constructed uses contemplated for the West Patterson Business Park include the Patterson Logistics Center and the West Ridge Business Park, which are both located along the Sperry Avenue corridor. At time of Draft EIR release, approximately 40 percent of the West Patterson Business Park was developed, approximately 30 percent was entitled for development and actively marketed for future development, and approximately 30 percent was undeveloped.

The Patterson City Council adopted a General Plan Update on November 30, 2010 that contemplated further development of business park, general commercial, and light industrial uses on the land immediately west of the West Patterson Business Park between Rogers Road and I-5 and the ultimate annexation of this land into the Patterson city limits. The proposed project is intended to represent the westerly expansion of the West Patterson Business Park, consistent with the General Plan’s vision for this area.

2.3 - Project Characteristics

2.3.1 - Project Overview

The proposed project consists of the development of approximately 13.47 million square feet of light industrial, business park, and general commercial uses and associated infrastructure on approximately 880 net acres of the project site. The proposed project consists of two components: Arambel Business Park and the KDN Retail Center/Business Park, which are under separate ownership. The Arambel Business Park would consist of 12,183,050 square feet of new light industrial, business park, and general commercial uses on 775.89 net acres, while the KDN Retail Center/Business Park would consist of 1,287,400 square feet of new business park and general commercial uses on 104.70 net acres. Table 2-2 summarizes the project. Each component is discussed separately after the table. The conceptual development plan is provided in Exhibit 2-5.

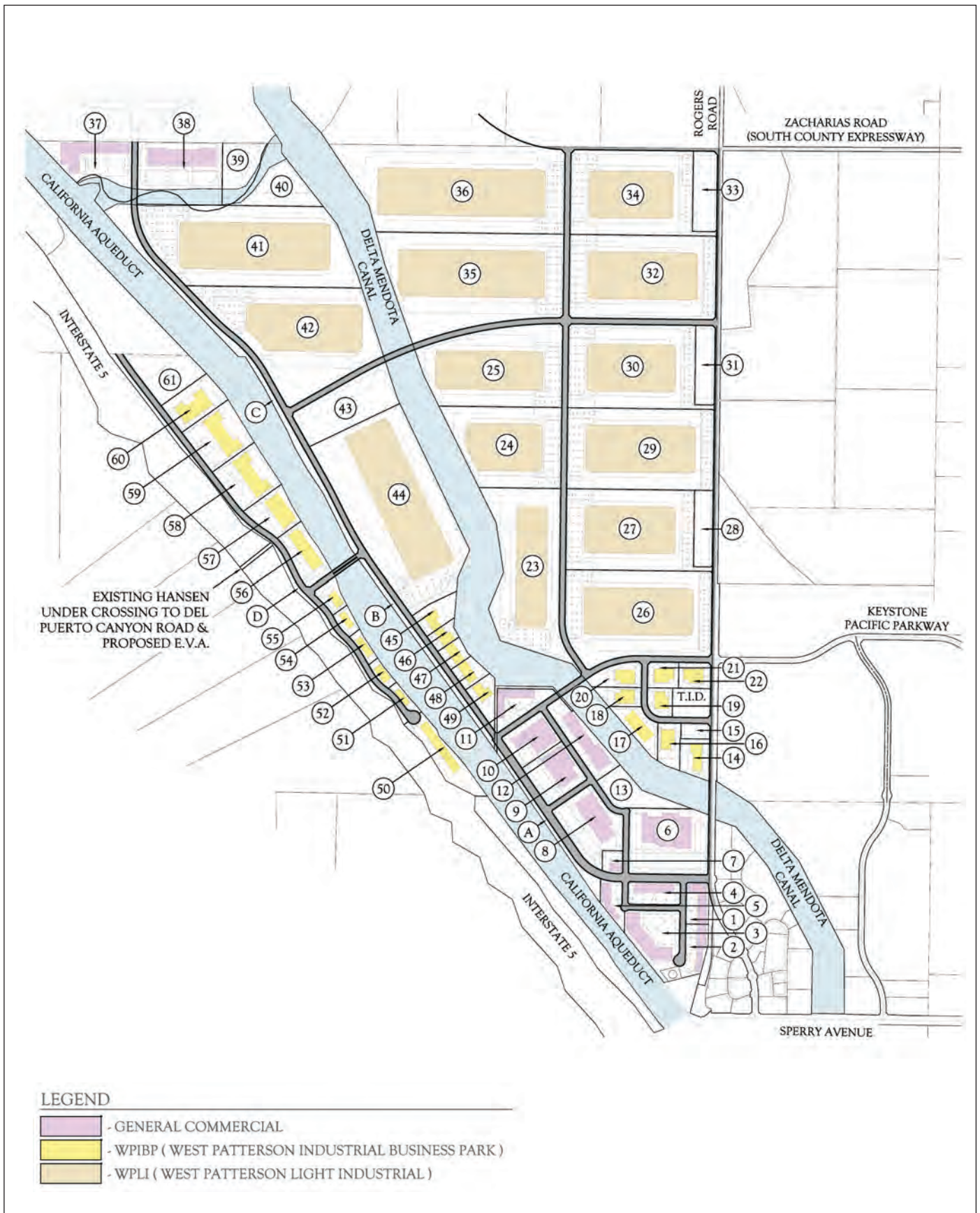
Table 2-2: West Patterson Business Park Expansion Project Summary

Component	End Use	Net Acres	Square Feet
Arambel Business Park	Light Industrial	652.46	11,037,850
	Business Park	87.70	839,200
	General Commercial	35.73	306,000
	<i>Subtotal</i>	<i>775.89</i>	<i>12,183,050</i>
KDN Retail Center/Business Park	General Commercial	87.09	1,089,700
	Business Park	17.61	197,700
	<i>Subtotal</i>	<i>104.70</i>	<i>1,287,400</i>
Total		880.59	13,470,600
Source: GDR Engineering, 2012.			

2.3.2 - Master Development Plan

The proposed project would be guided by a Master Development Plan, officially known as the “West Patterson Business Park Expansion Project Master Development Plan.” The Master Development Plan establishes the regulatory framework that will govern development of the proposed project. The Master Development Plan is intended to supplement the General Plan by establishing area-specific development standards and design guidelines that will apply to new development within the plan boundaries.

The Master Development Plan establishes the West Patterson Industrial Business Park, West Patterson Light Industrial and General Commercial zoning district regulations. The Master Development Plan applies development standards that are modified, in some instances, from the Patterson Municipal Code, Title 18, Zoning. Development must comply with all provisions of the Municipal Code unless specifically modified by the Master Development Plan. Where differences occur, the Master Development Plan mandatory requirements and design guidelines shall prevail.



Source: City of Patterson, Stanislaus County, State of California

Land Use Classifications

The Master Development Plan sets forth three industrial zoning classifications: West Patterson Industrial Business Park (WPIBP), West Patterson Light Industrial (WPLI), and General Commercial (GC).

West Patterson Industrial Business Park (WPIBP)

The West Patterson Industrial Business Park (WPIBP) district is applied to areas appropriate for light industrial and business park land uses, including low-intensity manufacturing and assembly processes, research and development, corporate headquarters, offices, medical and health facility uses, and other uses as specified in this chapter. The land uses allowed and development standards required within the WPIBP district are intended to protect adjacent areas from impacts while allowing indoor, clean, and quiet industry.

Land uses in the WPIBP zoning district are often organized as a business park, with tenants that may include some commercial and office activities. The WPIBP zoning district is consistent with the light industrial land use designation of the City of Patterson general plan.

West Patterson Light Industrial (WPLI)

The West Patterson Light Industrial (WPLI) zoning district is applied to areas appropriate for light industrial and manufacturing, warehousing, offices and assembly uses. Land uses allowed in the WPLI zoning district will not create objectionable noise, smoke, odor, dust, noxious gases, glare, heat, vibration, or industrial wastes. The WPLI zoning district is consistent with the light industrial land use designation of the general plan.

General Commercial (GC)

The General Commercial district is to stabilize, improve, and protect the characteristics of commercial businesses and to provide adequate locations for stores, shops and offices that supply commodities or perform services for residents of the City as a whole.

Guidelines for the Design of New Development

Master Development Plan Chapter III provides guidelines to aid designers, the public, and decision-makers by expressing the vision for the quality and attractiveness expected from new development in the Plan Area Chapter III of the Master Development Plan provides guidelines for the following: general qualities of design; colors and materials; site planning; parking and access; signs; landscaping, walls, screening and lighting; and arterials and streetscape improvements. As with any significant project, implementation of development would be required to undergo the City's development review process, which would determine if a design review is required. This process would ensure that development within the proposed project is designed in accordance with applicable provisions of the Master Development Plan and Municipal Code.

Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion of the guidelines.

Guidelines for Commercial Development

Master Development Plan Chapter IV establishes general principles of design applicable to all commercial development as well as guidelines for large-scale retail centers developed within the Master Development Plan area. The guidelines are intended to ensure compatibility of the various individual development projects undertaken to implement the Master Development Plan and to establish a cohesive design identity.

Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion of the guidelines.

2.3.3 - Arambel Business Park

The Arambel Business Park would occupy 776 net acres be located north of the proposed future extension of Keystone Pacific Parkway. The Arambel component would consist of 41 parcels ranging in area from 1.06 to 60.82 net acres each. Of the 41 parcels, 35 would support building envelopes, with a collective development potential of 12,183,050 square feet. The remaining six parcels would be designated for storm drainage purposes.

End uses of the Arambel Business Park would consist of light industrial (11,037,850 square feet), business park (839,200 square feet), and general commercial (306,000 square feet). No specific tenants have been identified for any of the end uses. Table 2-3 summarizes the Arambel Business Park.

Table 2-3: Arambel Business Park Summary

Parcel	Net Acreage	Gross Acreage	End Use	Building Envelope (Square Feet)
20	3.72	4.61	Business Park	36,150
21	2.70	3.30	Business Park	36,150
22	2.79	3.23	Business Park	36,150
23	35.84	37.74	Light Industrial	535,650
24	27.88	28.67	Light Industrial	507,250
25	34.98	37.32	Light Industrial	608,000
26	42.51	45.19	Light Industrial	826,900
27	35.06	35.89	Light Industrial	619,400
28	4.83	5.14	Basin	—
29	39.88	41.00	Light Industrial	826,900
30	36.12	38.24	Light Industrial	619,400
31	5.23	5.76	Basin	—
32	41.07	43.71	Light Industrial	130,000
33	6.50	7.07	Basin	—
34	35.18	37.18	Light Industrial	619,350
35	54.18	56.52	Light Industrial	1,003,300
36	60.82	61.84	Light Industrial	1,152,900

Table 2-3 (cont.): Arambel Business Park Summary

Parcel	Net Acreage	Gross Acreage	End Use	Building Envelope (Square Feet)
37	11.51	12.07	General Commercial	141,600
38	17.67	18.27	General Commercial	164,400
39	6.55	6.55	Basin	—
40	9.53	9.53	Basin	—
41	52.23	53.18	Light Industrial	1,034,350
42	45.91	48.59	Light Industrial	764,000
43	6.10	7.36	Basin	—
44	67.28	69.41	Light Industrial	1,093,600
45	3.49	3.74	Business Park	27,200
46	1.76	1.94	Business Park	27,200
47	1.85	2.06	Business Park	29,000
48	2.26	2.51	Business Park	29,000
49	2.95	3.46	Business Park	27,200
50	6.54	6.77	Business Park	70,000
51	1.06	1.58	Business Park	12,600
52	1.22	1.53	Business Park	21,000
53	1.28	1.61	Business Park	20,000
54	1.50	1.77	Business Park	16,000
55	2.17	2.79	Business Park	18,000
56	5.80	6.71	Business Park	78,000
57	5.37	5.79	Business Park	75,900
58	8.31	8.80	Business Park	97,200
59	9.10	9.59	Business Park	97,200
60	6.44	6.77	Business Park	85,250
61	8.08	8.72	Basin	—

Source: GDR Engineering, 2012.

2.3.4 - KDN Retail Center/Business Park

The KDN Retail Center/Business Park would occupy 105 net acres and would be located south of the proposed future extension of Keystone Pacific Parkway. The KDN component would consist of 19 parcels ranging in area from 1.50 to 11.35 acres each. Of the 19 parcels, 17 would support general commercial and business park building envelopes, with a collective development potential of 1,287,400 square feet. The remaining two parcels would be designated for stormwater basin purposes.

End uses of the KDN Retail Center/Business Park would consist of general commercial (1,089,700 square feet) and business park (197,700 square feet). No specific tenants have been identified for any of the end uses. Table 2-4 summarizes the KDN Retail Center/Business Park.

Table 2-4: KDN Retail Center/Business Park Summary

Parcel	Net Acreage	Gross Acreage	End Use	Building Envelope (square feet)
1	3.15	3.91	General Commercial	60,000
2	3.72	4.17	General Commercial	45,000
3	9.15	10.40	General Commercial	120,700
4	3.93	5.72	General Commercial	47,700
5	2.77	3.40	General Commercial	37,600
6	17.41	19.42	General Commercial	216,500
7	1.53	2.07	General Commercial	12,500
8	11.35	13.81	General Commercial	136,250
9	7.47	9.07	General Commercial	119,250
10	5.99	7.38	General Commercial	115,400
11	4.78	5.49	General Commercial	59,900
12	7.11	8.18	General Commercial	118,900
13	5.73	6.17	Basin	—
14	3.72	3.90	Business Park	37,400
15	1.50	1.87	Basin	—
16	3.30	3.53	Business Park	36,150
17	4.12	4.32	Business Park	56,650
18	2.66	2.85	Business Park	36,150
19	2.31	2.80	Business Park	31,500
Source: GDR Engineering, 2012.				

2.3.5 - Landscaped Strips

The proposed project would also create four lots that would be dedicated for landscaping use. Each lot contains narrowly shaped, non-buildable areas located between internal roadways and I-5 or the California Aqueduct. Table 2-5 summarizes the landscaped strip lots.

Table 2-5: Landscaped Strip Lot Summary

Lot	Net Acreage	Gross Acreage
A	3.00	5.28
B	3.81	6.10
C	11.33	15.56
D	5.50	10.08
Source: GDR Engineering, 2012.		

2.3.6 - Design and Appearance

The proposed project's structures would employ contemporary architecture typical of that for business/industrial parks and general commercial retail centers. Buildings would be primarily constructed of concrete tilt-up panels and painted "Tony Taupe," "Accessible Beige," "Urbane Bronze," or similar colors. The buildings would also feature 12-foot by 14-foot roll-up doors, 9-foot by 10-foot dock doors, and 3-foot by 7-foot traditional "man" doors. A 12-inch-tall address sign would be located near the roofline of each building. Exhibit 2-6a through Exhibit 2-6c provide conceptual elevations of three separate building prototypes.

2.3.7 - Circulation Improvements

The proposed project would involve the construction of new roadways and the improvement of existing facilities. The following are summaries of key circulation improvements. Roadway cross-sections are shown in Exhibit 2-7.

- **Rogers Road:** This existing 50-foot-wide roadway would be improved to provide a 100-foot section along the project frontage. The roadway would feature 78 feet of curb-to-curb width and a 22-foot-wide area on the west side of the roadway for landscaping and a sidewalk.
- **Zacharias Road:** This existing roadway would be improved to provide an interim 65-foot-wide section along the project frontage. (Zacharias Road is being considered as the future alignment of the South County Expressway in the project vicinity, which would include an interchange with I-5.) The interim roadway section would provide 41 feet of curb-to-curb width (25 feet eastbound; 16 feet westbound) with swales on either side for storm drainage. The interim section is intended to be in place until the roadway is improved to expressway standards, provided that the South County Expressway is actually developed and follows the Zacharias Road alignment. Note that construction of the complete South County Expressway (including I-5 interchange) is independent of the proposed project and subject to separate environmental review.²
- **Keystone Pacific Parkway Extension:** This roadway would be extended westward from its current terminus at Rogers Road to the new north-south internal roadway. This new roadway would include a crossing of the Delta-Mendota Canal. The roadway would provide a 70-foot-wide section featuring 50 feet of curb-to-curb width (one 25-foot-wide lane in each direction), and 10 feet of landscaping and sidewalk on each side.
- **North-South Internal Roadway:** A new internal roadway would be developed that would intersect Rogers Road at the existing intersection with Rogers Court and extend northward to the project boundary, paralleling the east side of the California Aqueduct. This new roadway would include a crossing of Del Puerto Creek. The roadway would provide a 96-foot-wide section featuring 72 feet of curb-to-curb width (36 feet in each direction), and 12 feet of landscaping and

² Stanislaus Council of Governments (StanCOG) is the lead agency for the South County Expressway Project. At the time of this writing, the South County Expressway is contemplated to be a 4- to 6-lane facility linking I-5 with Turlock. No funding has been obtained for this improvement and no implementation schedule has been identified.

sidewalk on each side within the KDN portion of the project site. Within the Arambel portion of the site, it would transition to a 70-foot-wide section featuring 50 feet of curb-to-curb width (25 feet in each direction), and 10 feet of landscaping and sidewalk on each side.

- **East-West Internal Roadway.** A new internal roadway would be developed that would link Rogers Road with the new north-south internal roadway. This new roadway would include a crossing of the Delta-Mendota Canal. The roadway would provide a 70-foot-wide section featuring 50 feet of curb-to-curb width (25 feet in each direction), and 10 feet of landscaping and sidewalk on each side.

In addition, a network of smaller streets would provide local access to the uses within the proposed project.

Waterway Crossings

The proposed project would involve the construction of four waterway crossings. The crossings would involve two spans of the Delta-Mendota Canal and one each of the California Aqueduct and Del Puerto Creek. The Delta-Mendota Canal and California Aqueduct crossings would fully span the waterways in accordance with guidance issued by San Luis & Delta-Mendota Water Authority and California Department of Water Resources. Additionally, the new crossings of the Delta-Mendota Canal and California Aqueduct may involve offsetting removal of existing waterway crossings within the project boundaries to yield no net increase in the number of spans.

Emergency Vehicle Access

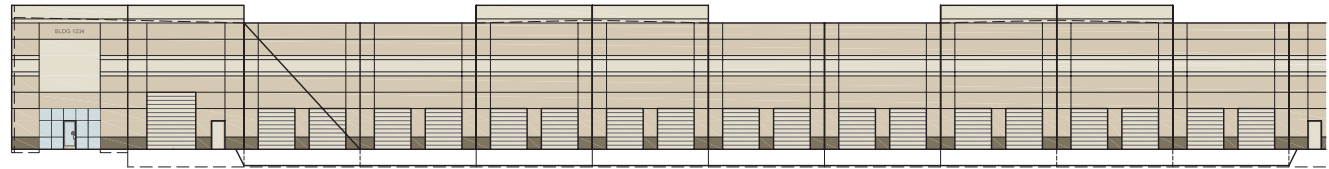
An existing 0.5-mile-long, unpaved road connects the project site to Del Puerto Canyon Road via an undercrossing of I-5. This road would be improved to provide a 20-foot-wide, all-weather surface that would serve as an Emergency Vehicle Access. Access to either end of the Emergency Vehicle Access would be restricted with a gate or similar barrier to prevent unauthorized use³. The Emergency Vehicle Access is intended to allow for the portion of the project site between I-5 and the California Aqueduct to be served with two points of access, pursuant to California Fire Code requirements. Exhibit 2-8 depicts the location of the Emergency Vehicle Access.

2.3.8 - Infrastructure Improvements

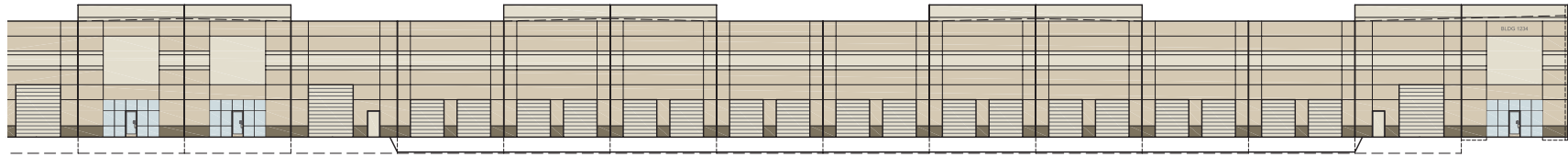
Storm Drainage

The proposed project's storm drainage system would consist of underground piping and detention basins that would capture and detain runoff. Pipelines ranging from 12 inches to 72 inches in diameter would convey runoff to eight stormwater basins within the project site ranging in size from 1.45 to 12.36 acres. In accordance with the City of Patterson's standards, these basins would be sized for a 50-year, 24-hour storm event, which is equivalent to 2.24 inches of rainfall.

³ Emergency responders would be equipped to open the gate or barrier.



FRONT ELEVATION
Not to Scale



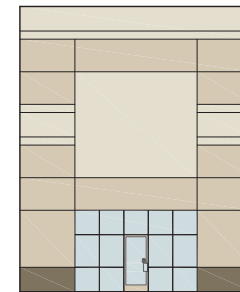
FRONT ELEVATION
Not to Scale

EXTERIOR ELEVATION KEYNOTES

- Aluminum storefront system, factory finished with safety glazing per CBC
- Painted concrete tilt - up panel
- 12'-0" x 14'-0" Roll - Up door (painted)
- 3'-0" x 7'-0" Exterior man door (painted)
- 9'-0" x 10'-0" Dock door (painted)
- 2" nom. formed reveal
- Line of roof deck (ref. struct. for ledger elevation)
- 12" high building address sign
- Gutter and Downspout

COLOR SCHEDULE

- Paint SW 7038 Tony Taupe or Similar
- Paint SW 7036 Accessible Beige or Similar
- Paint SW 7048 Urbane Bronze or Similar



EXAMPLE PAINT SCHEME
Not to Scale

Source: City of Patterson, Stanislaus County, State of California

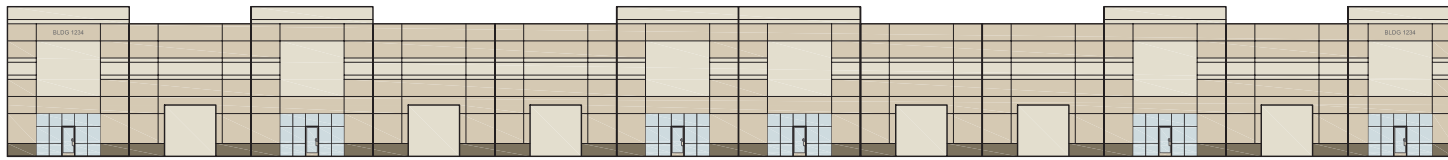


Michael Brandman Associates

17900001 • 11/2011 | 6a_conceptual_elevation.cdr

Exhibit 2-6a Conceptual Elevation 300,000 Square Foot (or Larger) Buildings

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



FRONT ELEVATION
Not to Scale



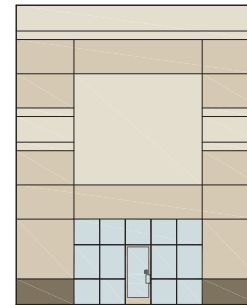
REAR ELEVATION
Not to Scale

EXTERIOR ELEVATION KEYNOTES

- Aluminum storefront system, factory finished with safety glazing per CBC
- Painted concrete tilt - up panel
- 12'-0" x 14'-0" Roll - Up door (painted)
- 3'-0" x 7'-0" Exterior man door (painted)
- 9'-0" x 10'-0" Dock door (painted)
- 2" nom. formed reveal
- Line of roof deck (ref. struct. for ledger elevation)
- 12" high building address sign
- Gutter and Downspout

COLOR SCHEDULE

- Paint SW 7038 Tony Taupe or Similar
- Paint SW 7036 Accessible Beige or Similar
- Paint SW 7048 Urbane Bronze or Similar



EXAMPLE PAINT SCHEME
Not to Scale

Source: City of Patterson, Stanislaus County, State of California



Michael Brandman Associates

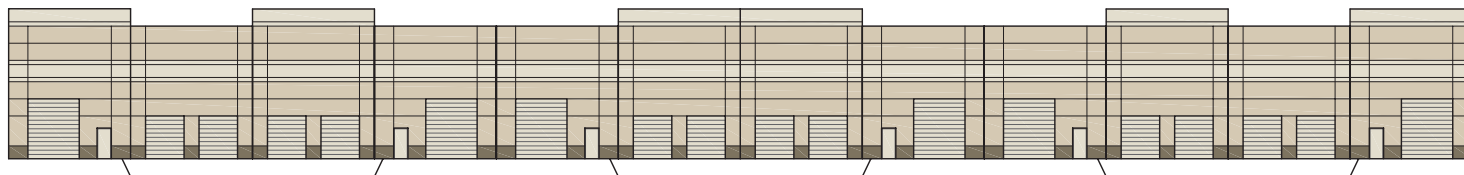
17900001 • 11/2011 | 6b_conceptual_elevation.cdr

Exhibit 2-6b Conceptual Elevation 50,000 Square Foot (or Smaller) Buildings With Depressed Dock

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



FRONT ELEVATION
Not to Scale



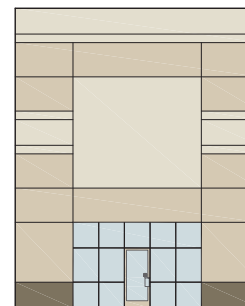
REAR ELEVATION
Not to Scale

EXTERIOR ELEVATION KEYNOTES

- Aluminum storefront system, factory finished with safety glazing per CBC
- Painted concrete tilt-up panel
- 12'-0" x 14'-0" Roll-Up door (painted)
- 3'-0" x 7'-0" Exterior man door (painted)
- 9'-0" x 10'-0" Dock door (painted)
- 2" nom. formed reveal
- Line of roof deck (ref. struct. for ledger elevation)
- 12" high building address sign
- Gutter and Downspout

COLOR SCHEDULE

- Paint SW 7038 Tony Taupe or Similar
- Paint SW 7036 Accessible Beige or Similar
- Paint SW 7048 Urbane Bronze or Similar



EXAMPLE PAINT SCHEME
Not to Scale

Source: City of Patterson, Stanislaus County, State of California

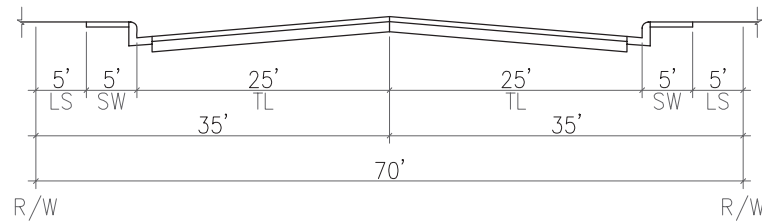


Michael Brandman Associates

17900001 • 11/2011 | 2-6c_conceptual_elevation.cdr

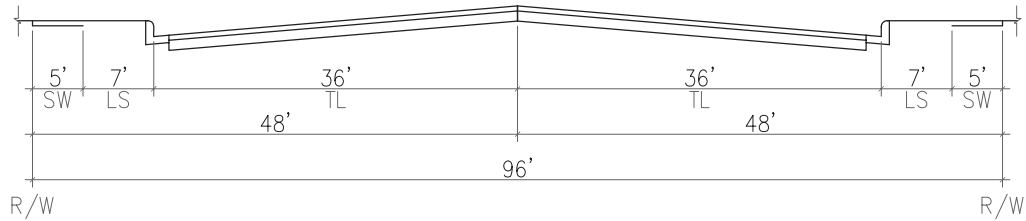
Exhibit 2-6c Conceptual Elevation 50,000 Square Foot (or Smaller) Buildings

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



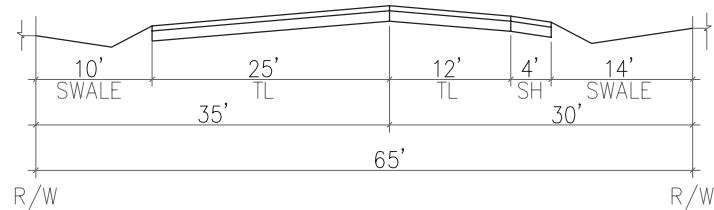
SECTION A - A

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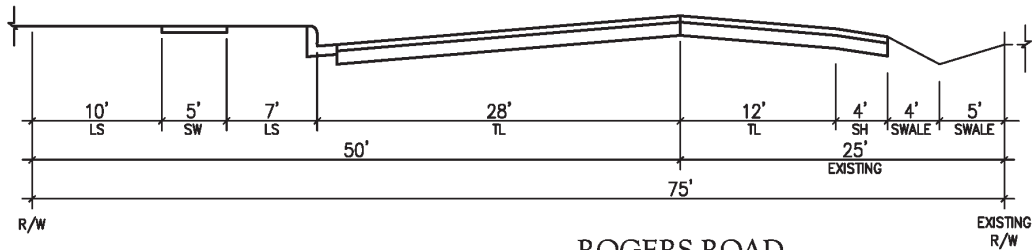
SECTION B - B

NOT TO SCALE



SECTION C - C

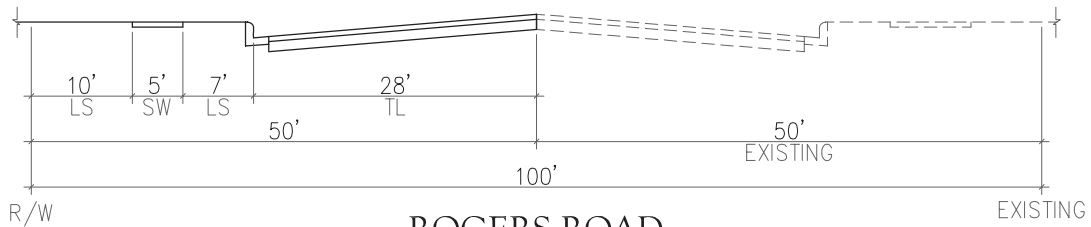
NOT TO SCALE



ROGERS ROAD

SECTION D - D

NOT TO SCALE



ROGERS ROAD

NOT TO SCALE

Source: City of Patterson, Stanislaus County, State of California



Michael Brandman Associates

17900001 • 04/2012 | 2-7_roadway_sections.cdr

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Exhibit 2-7
Roadway Sections



Source: ESRI Aerial Imagery

Basins would consist of both detention and recharge: the detention basins would be located in areas where soil conditions are unsuitable for percolation, and recharge basins would be located in areas where soil conditions are suitable for percolation. Runoff would generally be conveyed in a south-to-north direction. A force main would be used to convey runoff from a detention basin in the KDN portion of the site to the Arambel portion of the site where the recharge basins would be located.

An approximately 19-acre portion of the KDN Retail Center/Business Park adjacent to Rogers Road would discharge runoff to an existing 18-inch storm drain line located within Keystone Pacific Parkway, which ultimately outlets into Salado Creek. During peak storm events, stormwater would be detained onsite in a basin. Once the storm event is over and the City's municipal storm drain system is clear, runoff will be released into the City system at a controlled rate. This design is intended to avoid creating a need for downstream improvements to the City's municipal storm drain system.

Note that the proposed project would not use or rely upon any existing storm drainage facilities that serve the Villa Del Lago commercial project to the south of the project site and also would not discharge runoff into the Delta-Mendota Canal.

Exhibit 2-9a and Exhibit 2-9b depict the storm drainage master plan, and Exhibit 2-9c illustrates the shed areas.

Water

The proposed project would be served with both potable water and non-potable water. The City of Patterson would provide potable water service to the proposed project for domestic use. Onsite privately owned wells that pump water from the upper aquifer would be the source of non-potable water, which would be used for irrigation use.

The distribution system would consist of "looped" systems featuring 16-inch and 12-inch-diameter pipelines that would provide domestic and fire flows. The distribution system would be located within roadways. This system would connect to an existing 16-inch diameter water line within Rogers Road and an existing 12-inch-diameter water line within Keystone Pacific Parkway.

A 1.4-million-gallon storage tank will be installed within the project site near the Delta-Mendota Canal at either the future Keystone Parkway Extension or the future East-West Internal Roadway; refer to Exhibit 2-10a. This would augment the existing 1.3-million-gallon storage tank (Gateway Tank Site) located within the KDN portion of the project site, which together would provide a total of 2.7 million gallons of storage capacity. The need for the 1.4-million gallon storage tank would be triggered at the point that 130 acres are developed. A 16-inch-diameter transmission line would connect the Gateway Tank Site with the new tank site contemplated by the proposed project.

A booster pump station would be required to ensure adequate water pressure is available. The booster pump station would operate at a minimum flow of 2,300 gallons per minute for domestic demand and a minimum flow of 4,500 gallons per minute for fire water. In addition, as many as two inline

booster pumps may need to be installed to provide water service to the area between the California Aqueduct and I-5.

Exhibit 2-10a and Exhibit 2-10b depict the waster master plan. Exhibit 2-11a and Exhibit 2-11b depict the non-potable water master plan.

Sewer

The City of Patterson would provide sewer collection and wastewater treatment service to the proposed project.

The collection system would consist of 12-inch-diameter and 8-inch-diameter pipelines. The southern portion of the project (i.e., south of the Delta-Mendota Canal) would convey effluent south via gravity to an existing 12-inch-diameter sewer line within Rogers Road. The northern portion of the project (i.e., north and west of the Delta-Mendota Canal) would convey effluent via gravity to a pump station located along Rogers Road.

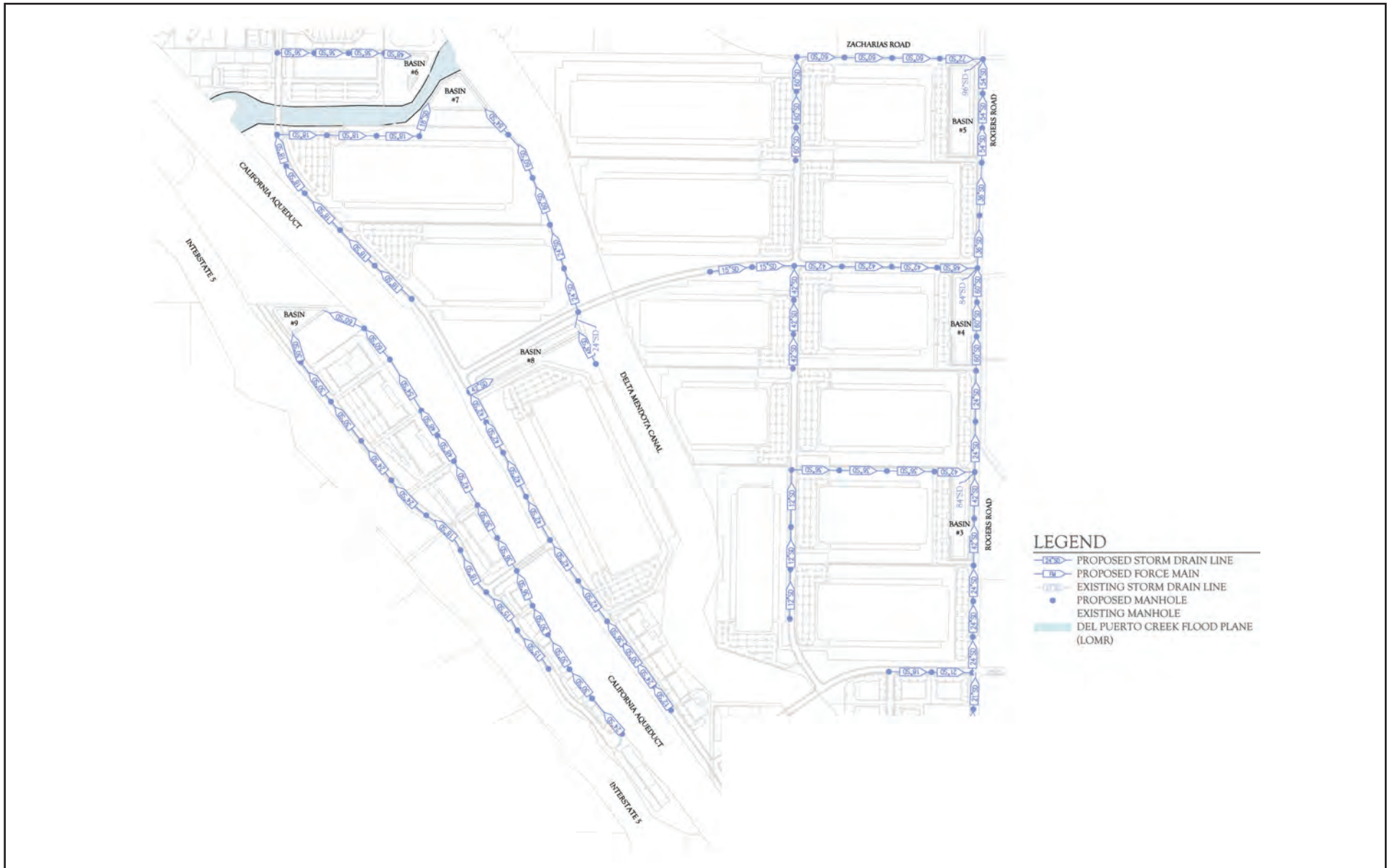
From the pump station, effluent would be conveyed via a force main to an existing manhole within Sperry Avenue on the east side of the Delta-Mendota Canal, via one of three offsite utility alignments summarized in Table 2-6. At this manhole, effluent would enter an existing 18-inch-diameter sewer pipeline with Sperry Avenue that conveys flows to the Water Quality Control Facility. Exhibit 2-12a and Exhibit 2-12b depict the sewer master plan, and Exhibit 2-12c illustrates the offsite improvements.

Table 2-6: Offsite Sewer Alignments Summary

Alignment	Lineal Feet (approximate)	Characteristics
1	2,500	Begins at Rogers Road/Rogers Court and follows Rogers Road to a manhole located within Sperry Avenue.
2	3,400	Begins at Rogers Road/Delta-Mendota Canal and follows the east side of the canal to a manhole within Sperry Avenue.
3	7,500	Begins at Rogers Road/Lateral 6 South and follows the lateral to a point south of Keystone Pacific Parkway; at this point, the alignment follows a planned (but unbuilt) roadway south through the current Patterson Airport to a manhole within Sperry Avenue.
Source: Michael Brandman Associates, 2012.		

Water Quality Control Facility Expansion

The proposed project would contribute to a need to expand treatment capacity the City of Patterson's Water Quality Control Facility located at 14901 Poplar Avenue. The current facility—approximately 160 acres in area—is permitted to treat 2.25 million gallons per day (mgd) of effluent and receives an average of 1.4 mgd during dry weather.



Source: City of Patterson, Stanislaus County, State of California

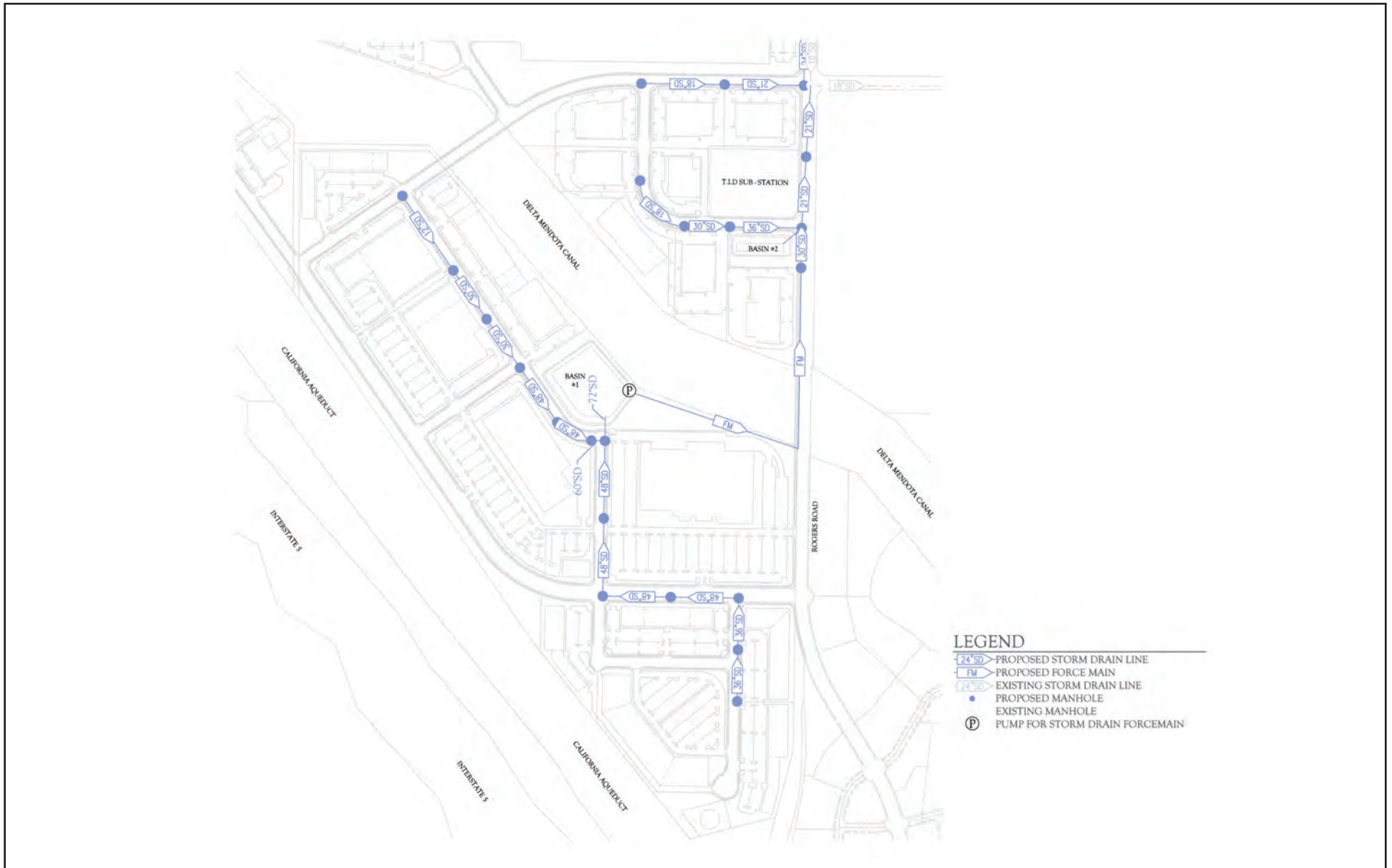


Michael Brandman Associates

17900001 • 04/2012 | 2-9a_storm_drainage.cdr

Exhibit 2-9a Storm Drainage Master Plan - Arambel

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ENVIRONMENTAL IMPACT REPORT



Source: City of Patterson, Stanislaus County, State of California

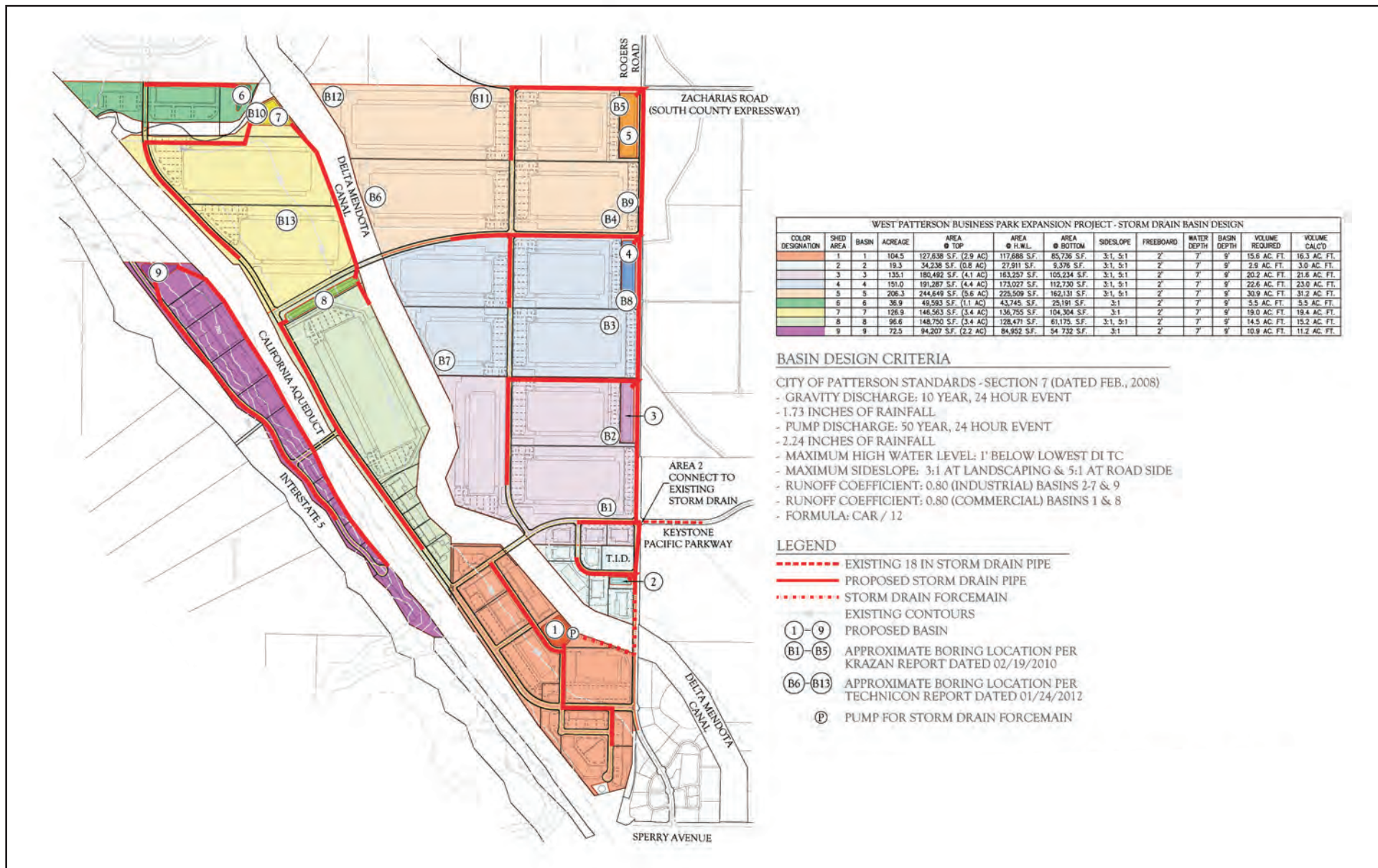


Michael Brandman Associates

17900001 • 04/2012 | 2-9b_storm_drainage.cdr

Exhibit 2-9b Storm Drainage Master Plan - KDN

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



Source: City of Patterson, Stanislaus County, State of California

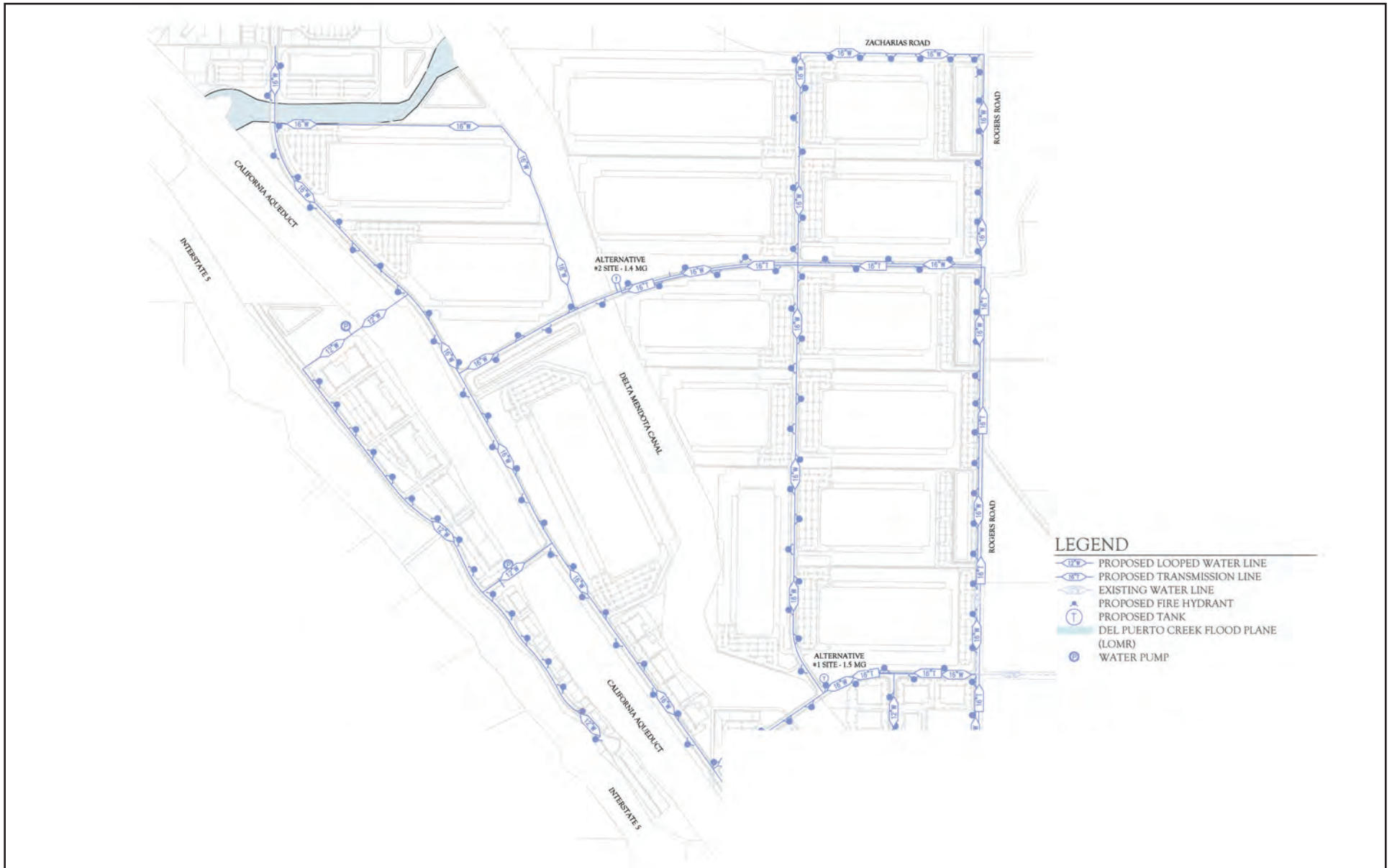


Michael Brandman Associates

17900001 • 04/2012 | 2-9c_storm_drainage.cdr

Exhibit 2-9c Storm Drainage Master Plan - Shed Areas

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ENVIRONMENTAL IMPACT REPORT



Source: City of Patterson, Stanislaus County, State of California

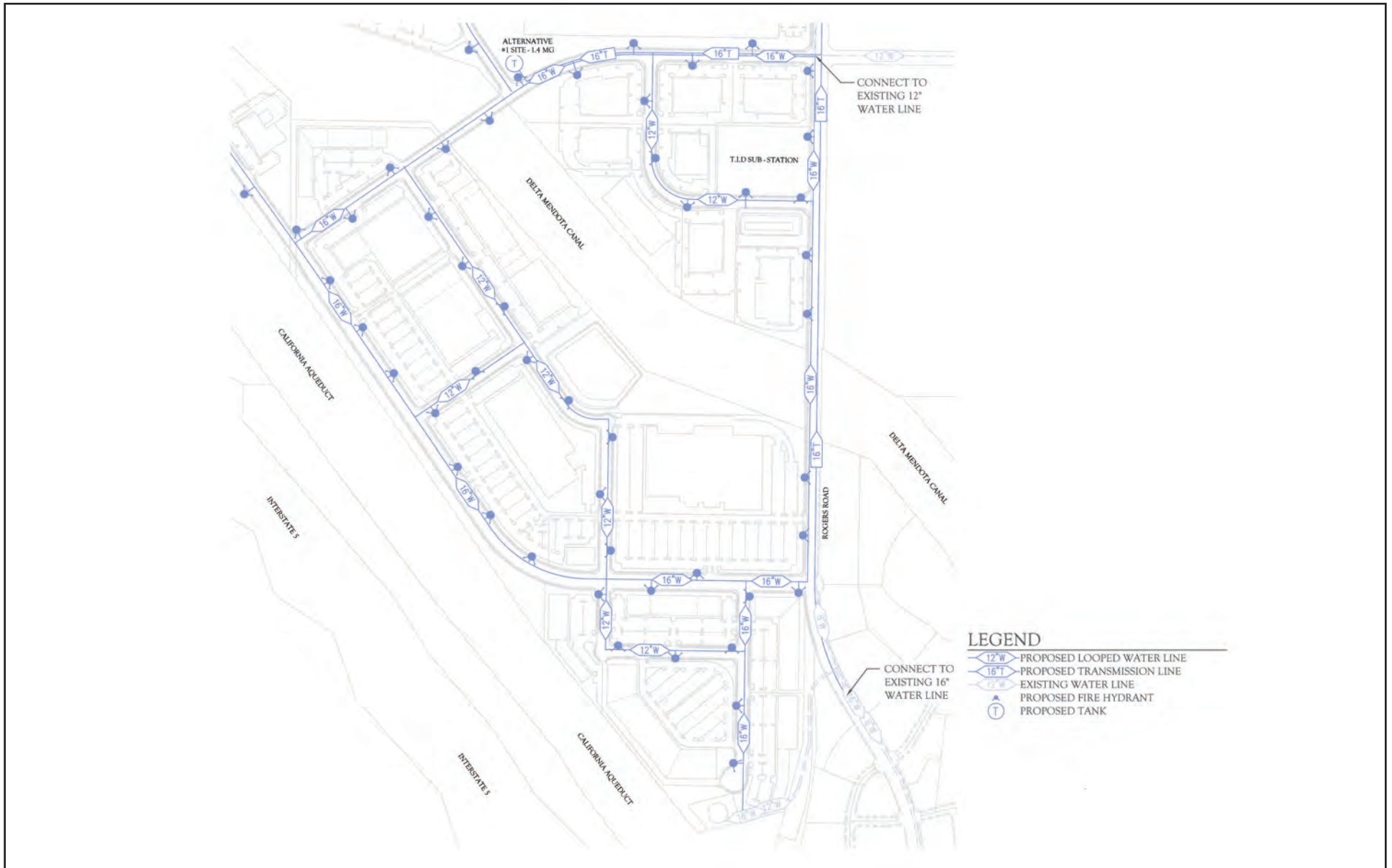


Michael Brandman Associates

17900001 • 04/2012 | 2-10a_water_master_plan.cdr

Exhibit 2-10a Water Master Plan - Arambel

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



Source: City of Patterson, Stanislaus County, State of California

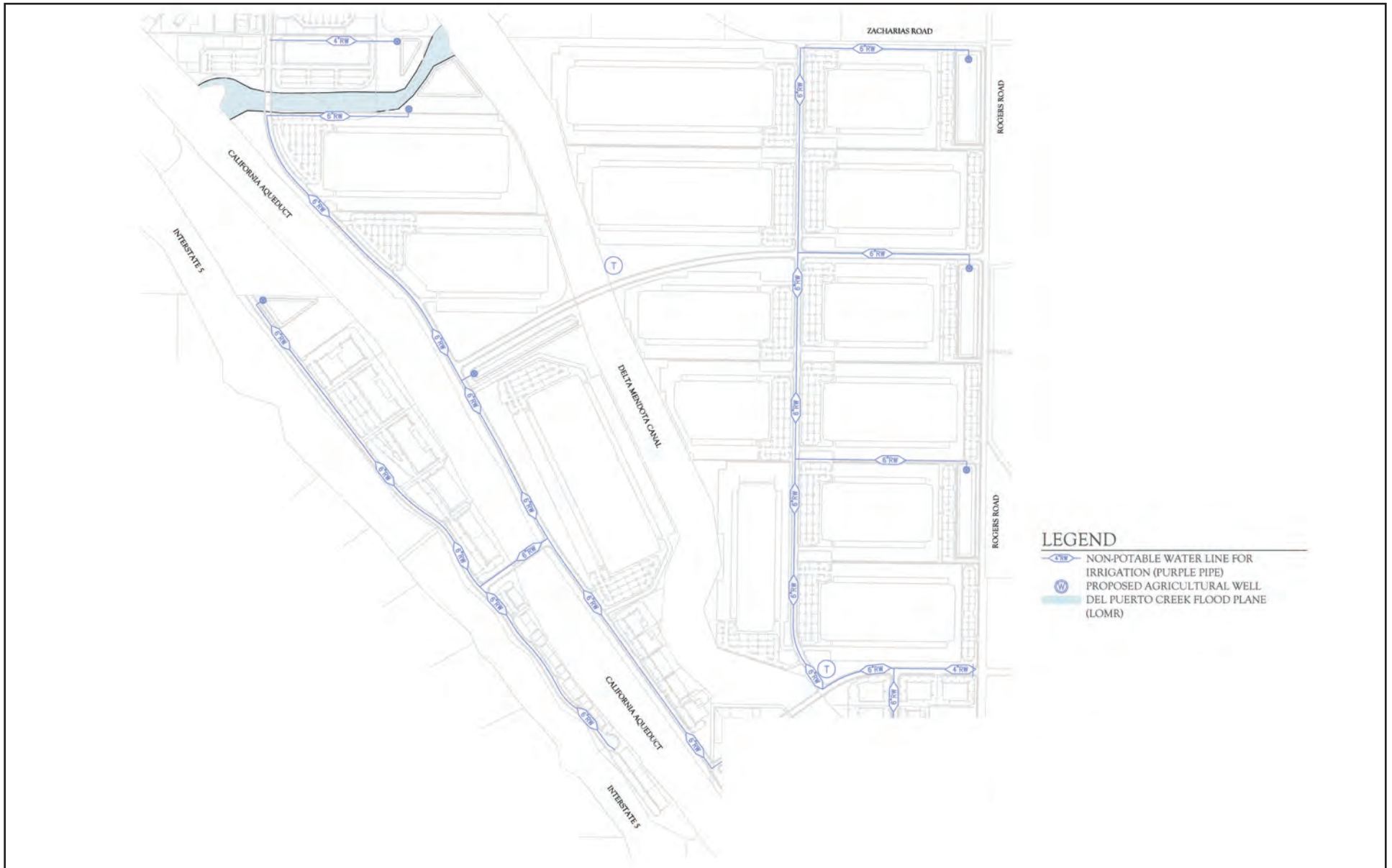


Michael Brandman Associates

17900001 • 04/2012 | 2-10b_water_master_plan.cdr

Exhibit 2-10b Water Master Plan - KDN

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



Source: City of Patterson, Stanislaus County, State of California

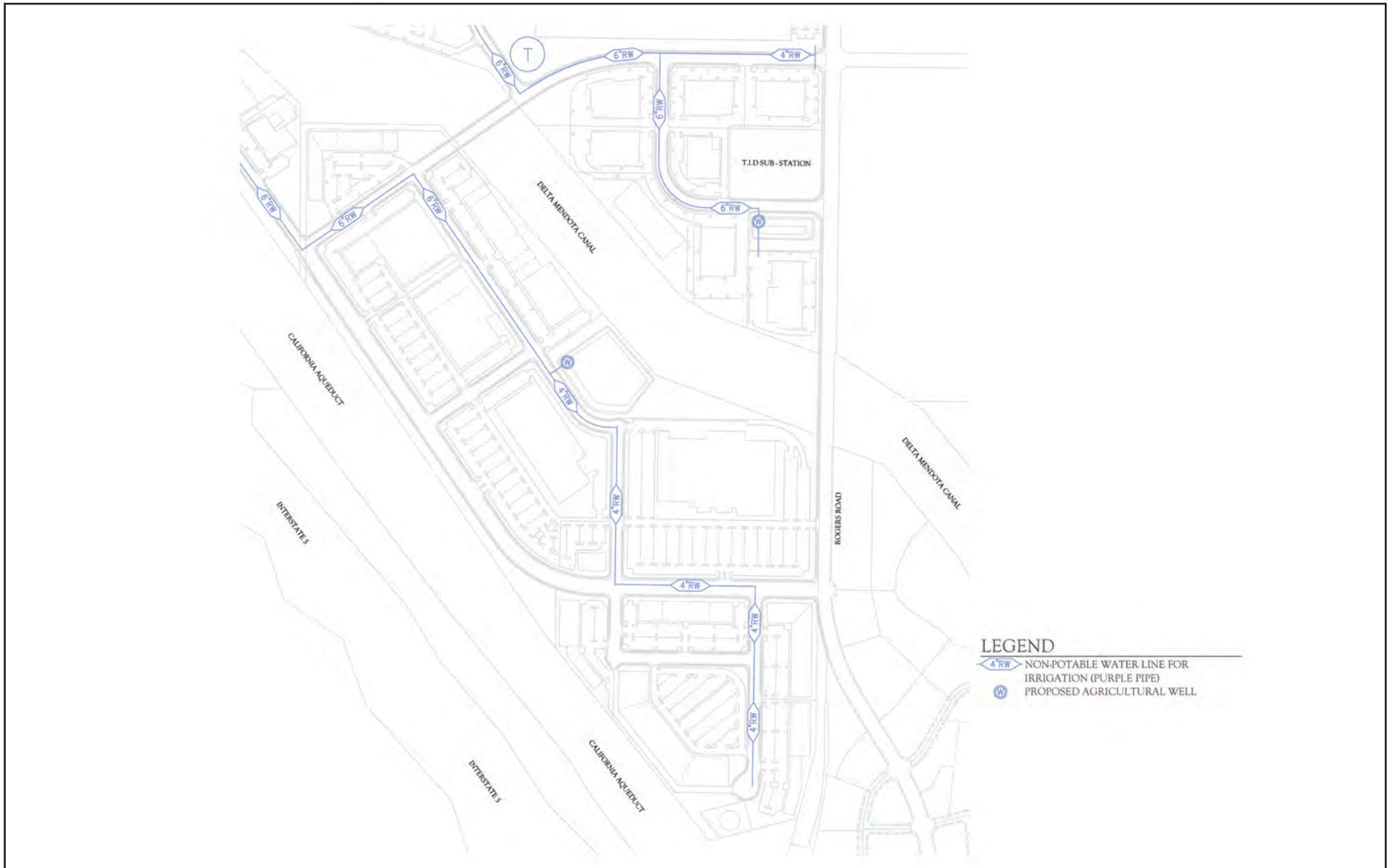


Michael Brandman Associates

17900001 • 04/2012 | 2-11a_non_potable_plan.cdr

Exhibit 2-11a Non-Potable Water Master Plan - Arambel

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



Source: City of Patterson, Stanislaus County, State of California

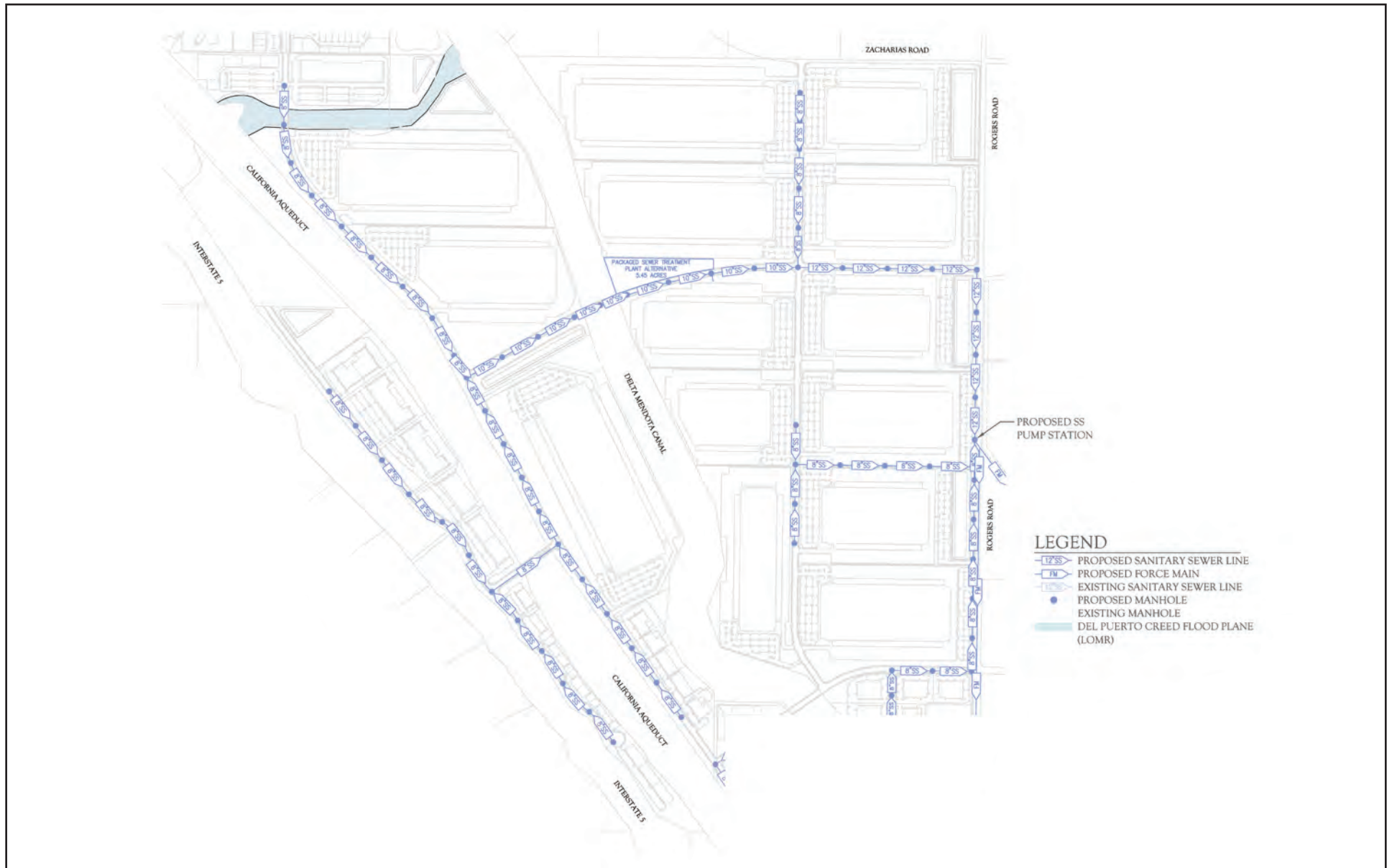


Michael Brandman Associates

17900001 • 04/2012 | 2-11b_non_potable_plan.cdr

Exhibit 2-11b Non-Potable Water Master Plan - KDN

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



Source: City of Patterson, Stanislaus County, State of California

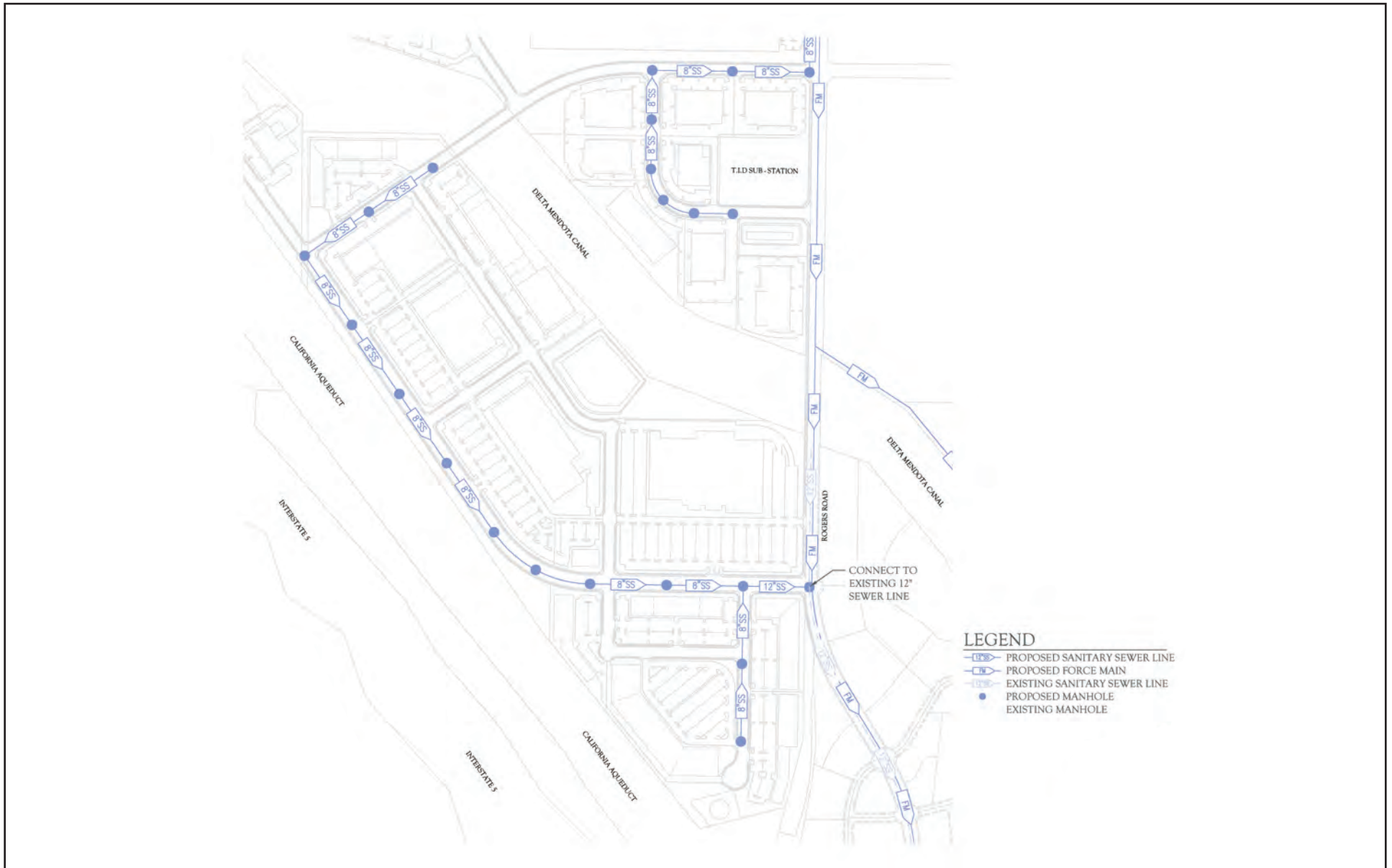


Michael Brandman Associates

17900001 • 04/2012 | 2-12a_sewer_plan.cdr

Exhibit 2-12a Sewer Master Plan - Arambel

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ENVIRONMENTAL IMPACT REPORT



Source: City of Patterson, Stanislaus County, State of California

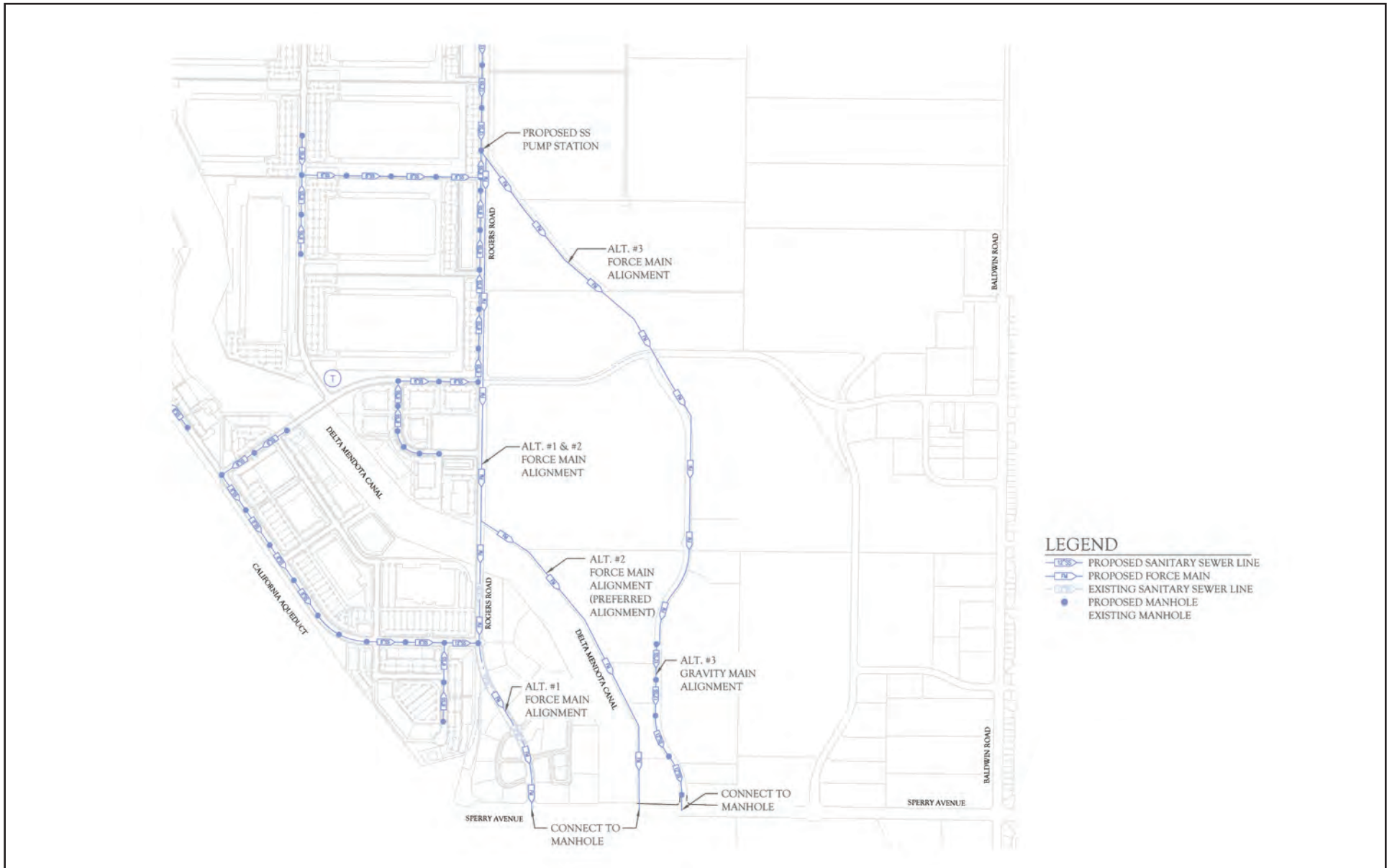


Michael Brandman Associates

17900001 • 04/2012 | 2-12b_sewer_plan.cdr

Exhibit 2-12b Sewer Master Plan - KDN

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



Source: City of Patterson, Stanislaus County, State of California



Michael Brandman Associates

17900001 • 04/2012 | 2-12c_sewer_plan.cdr

Exhibit 2-12c Sewer Master Plan - Offsite

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
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The City of Patterson has prepared improvement plans and acquired land for the expansion of the facility. The plans call for expanding the facility's treatment capacity by 1.25 mgd to 3.50 mgd. However, since approval of the expansion in 2010, regulations have been put in place that increase the period of time that wastewater needs to be stored onsite, which effectively reduce sewage treatment capacity by 0.3 mgd to 0.5 mgd, for a capacity of 3.00 mgd to 3.20 mgd. The City completed environmental review of the expansion pursuant to the California Environmental Quality Act (CEQA) in 2010 (State Clearinghouse No. 2010042038).

Furthermore, the City has approximately 1.332 mgd of capacity committed to other approved projects. When the existing dry weather flows of 1.432 mgd are accounted for, there is a projected future demand of 2.764 mgd, leaving 0.236 mgd to 0.436 available to the proposed project and other projects.

The proposed project is anticipated to generate 533,900 gallons (or 0.534 mgd) of effluent at buildout; refer to Section 3.12, Public Services and Utilities for further discussion about how this number was estimated. Thus, the expanded treatment plant would only be able to treat 56 to 82 percent of the proposed project's effluent relative to existing and committed capacity numbers. This number would be lower if other planned or approved projects use up available uncommitted capacity.

Depending on available capacity, the entire project or a portion of the project may be served by the Water Quality Control Facility. In the event that this occurs, the project applicant would contribute "fair-share" fees to the City of Patterson to fund necessary improvements to the Water Quality Control Facility, including expansion through participation in a community facilities financing district or other similar mechanism. Because CEQA review of the expansion has been completed and the City would undertake construction of the expansion independently of the proposed project, it is outside the scope of this EIR.

Wastewater treatment capacity is allocated on a "first come, first serve" basis. Because there are other approved and planned projects in the Patterson area, it is possible that the Water Quality Control Facility may not have capacity to serve one or more phases of the proposed project, should these other projects break ground before the proposed project. Likewise, it is also possible that downstream collection facilities may not have capacity to convey project-generated effluent to the Water Quality Control Facility. (The applicant will be required to confirm whether downstream conveyance capacity is available prior issuance of building permits.) Thus, the project applicant has proposed an onsite wastewater treatment plant as an option if either conveyance or treatment capacity is unavailable to serve the proposed project.

Refer to Section 3.12, Public Services and Utilities for further discussion of how the determination would be made concerning wastewater treatment.

Onsite Wastewater Treatment Plant Option

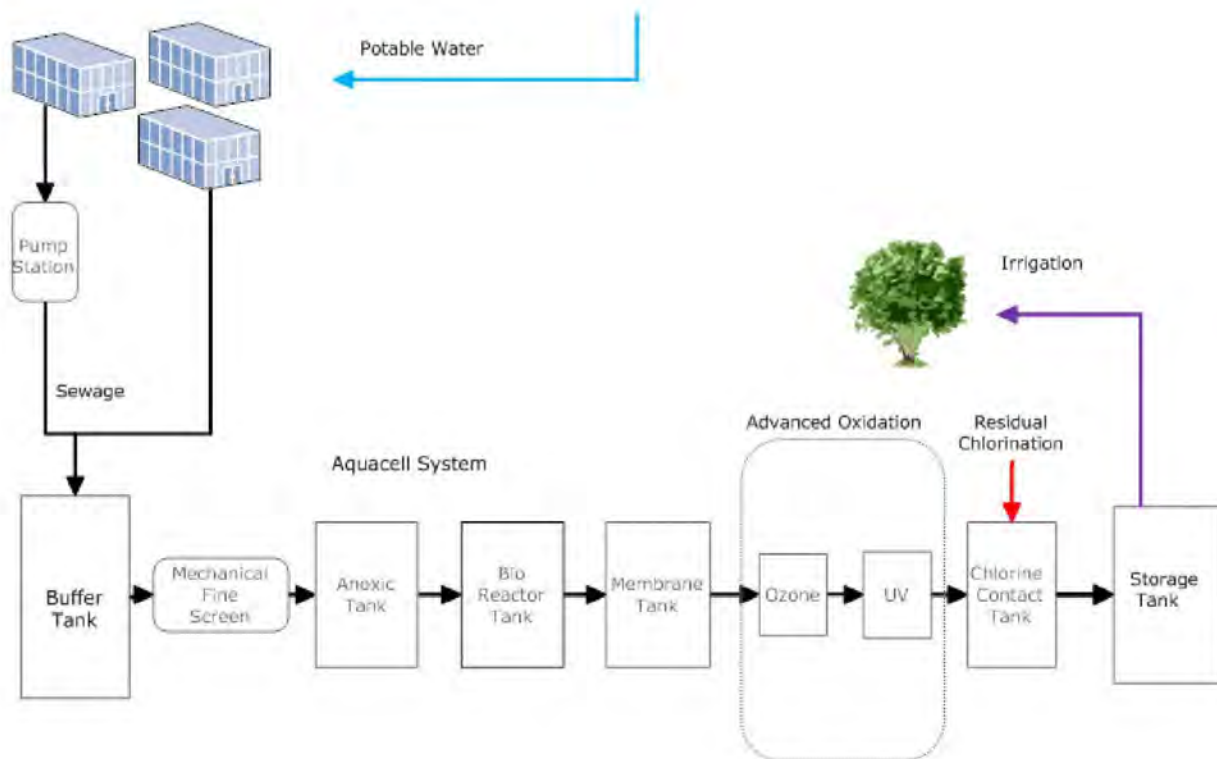
A privately owned and operated onsite wastewater treatment plant (known as a "package plant") may be used on an interim or permanent basis for one or more phases of the project. The untreated

effluent would be pumped to a treatment plant located on a 5.45-acre site near the Delta-Mendota Canal and the future East-West Internal Roadway within the Arambel Business Park portion of the project site; refer to Exhibit 2-12a.

The facility would be a prefabricated, packaged wastewater treatment plant with related equipment designed and constructed to comply with Title 22 requirements for use as recycled water. The package plant will have a maximum capacity of 0.700 mgd, which would be sufficient to serve the entire project (which is projected to generate 0.534 mgd of effluent at buildout). The package plant process is outlined as follows and is depicted in Exhibit 2-13:

1. *Pump Station*: Collect wastewater from the sewer and pump to the package plant system.
2. *Buffer Tank*: In-ground tank to act as a holding tank for untreated wastewater. Primarily, this is to ensure that excess flow during peak periods such as during the day can be stored and utilized at off-peak periods, such as the early hours of the morning.
3. *Mechanical Fine Screen*: For separating larger foreign objects from wastewater (rags, plastic, food scrap, etc.).
4. *Equalization Tank*: Can be installed above or below ground. Primarily used to smooth out operational flows and provide operational buffer capacity to allow for maintenance to occur on the plant. This can also be utilized to help reduce nutrient levels in treated water if needed.
5. *Bioreactor*: Can be installed above or below ground. Air is diffused into the wastewater to maintain oxygenated conditions to support the growth of aerobic bacteria. These bacteria efficiently break down the organic matter in the effluent. Dissolved oxygen probes ensure that a consistent environment is maintained in the tank to maximize microbial activity.
6. *Ultra-Filtration*: Custom-designed polyethylene rectangular tanks house submersed flat sheet membranes, with a pore size of 0.04 micron. Membranes are used to separate the effluent, without bacteria or virus passing through. These membranes are regularly scoured with air to ensure constant flow rates. Effluent flows through the membranes under the hydraulic head difference between the tank and the outlet.
7. *Ultra Violet Disinfection*: Although the effluent passing through the membranes does not contain bacteria or viruses, all effluent is passed through ultraviolet disinfection to provide additional confidence in the treated water.
8. *Residual Chlorination*: A chlorine residual is applied as a final disinfection barrier and to combat any microbial contamination that may occur in reticulation lines and effluent storage tanks.
9. *Treated Effluent Storage*: In-ground or aboveground tank to be utilized for effluent storage.

Landscaping would be provided around the plant to soften its visual impact. The plant would be secured and accessible only to authorized individuals. The plant owner would be responsible for operations and maintenance.



Source: GDR Engineering, Inc.



Michael Brandman Associates

Exhibit 2-13 Package Plant Process Diagram

Operation of the onsite wastewater treatment plant would require approvals from the Central Valley Regional Water Quality Control Board and the Stanislaus County Environmental Resources Department, including any water quality requirements.

Energy

TID would provide electrical service and Pacific Gas & Electric Company would provide natural gas service to the proposed project. All electrical and natural gas lines would be located underground. The existing overhead utility lines along Rogers Road may also be relocated, either underground or across the street.

The existing, overhead, high-voltage transmission power lines that parallel the California Aqueduct and serve the TID substation would remain in their current location.

Street Lighting

Streetlights would be installed along the various roadways within the project site. Lights would comply with City requirements and employ 200-watt, high-pressure sodium lamps. Exhibit 2-14a and Exhibit 2-14b depict the street lighting plan.

2.3.9 - Employment

The proposed project is estimated to generate 10,093 new, full-time employment opportunities. This employment estimate is based on employment rates contained in the City of Patterson General Plan for general commercial and business park/light industrial land uses. Table 2-7 provides the employment estimate calculation.

Table 2-7: Employment Estimate

Zoning District	Gross Acreage	Employment Rate	Employment
West Patterson Business Park Expansion Industrial Business Park	122.73	10 full-time jobs/ gross acre	1,227
West Patterson Business Park Expansion Light Industrial	675.39	10 full-time jobs/ gross acre	6,754
West Patterson Business Park Expansion General Commercial	150.89	14 full-time jobs/ gross acre	2,112
—	948.99	—	10,093
Notes: Employment rates obtained from City of Patterson General Plan. “Gross Acreage” represents the entire project site excluding the California Aqueduct and Delta-Mendota Canal. Source: Michael Brandman Associates, 2012.			

2.3.10 - Phasing

The proposed project would be expected to build out in multiple phases over a period of 20 to 30 years. Economic conditions will dictate the exact timing and characteristics of each phase. However,

in the interests of providing a conservative, “worst-case” analysis of phasing, Table 2-8 provides the phasing summary that will be used in this EIR. Exhibit 2-15 depicts the proposed phasing plan.

Table 2-8: Phasing Summary

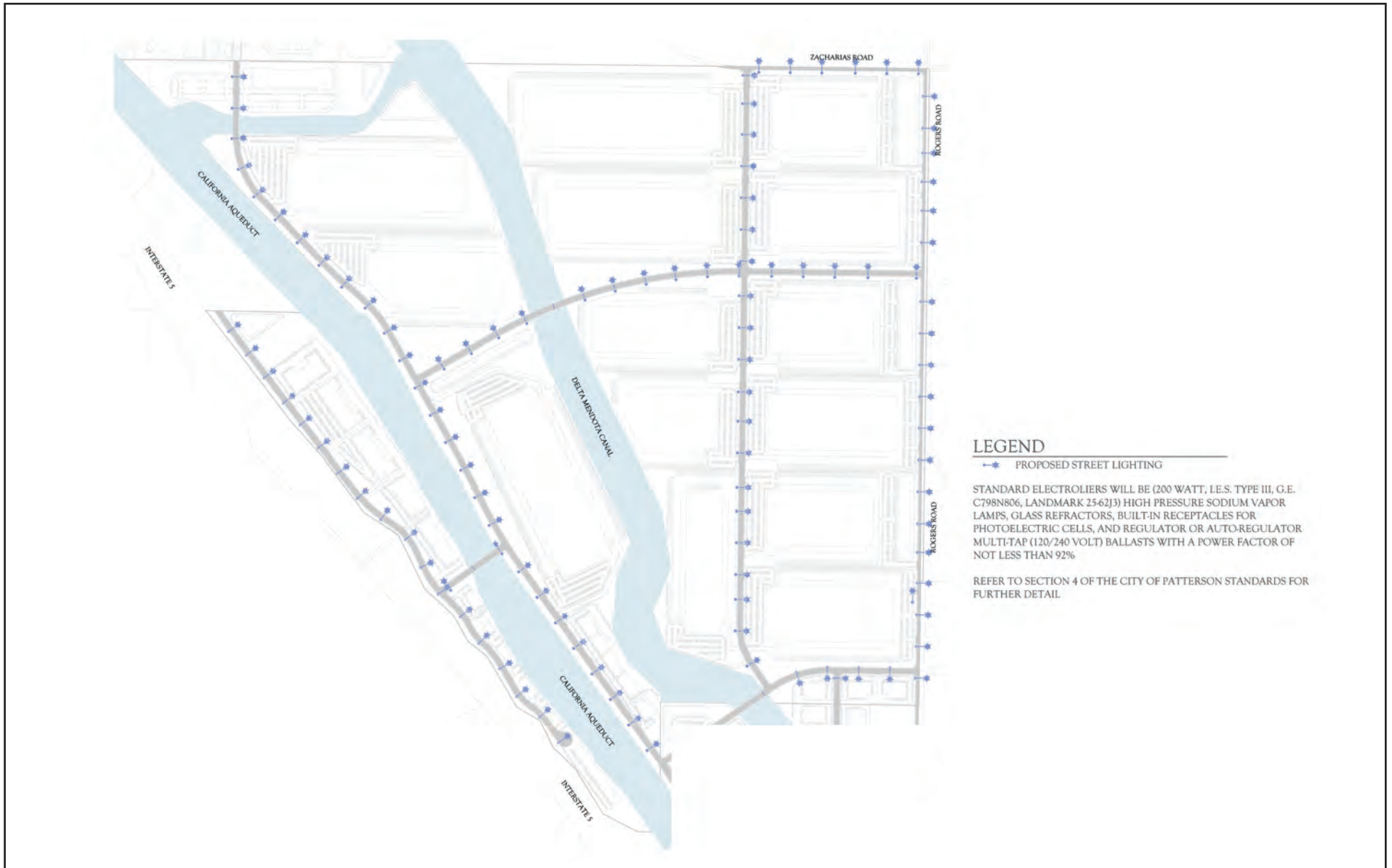
Phase	Characteristics	Earliest Start Date	Construction Buildout	First Year of Anticipated Buildout
1	General Commercial – 1,089,700 square feet	January 2013	120 months	2023
	Light Industrial – 4,543,500 square feet			
	Business Park – 306,300 square feet			
	Percent of Project	44		
2	Business Park/Light Industrial – 3,602,400 square feet	January 2023	60 months	2028
	Percent of Project	27		
3	General Commercial – 306,000 square feet	January 2028	36 months	2031
	Light Industrial – 2,891,950 square feet			
	Business Park – 139,600 square feet			
	Percent of Project	25		
4	Business Park/Light Industrial – 591,150 square feet	January 2031	12 months	2032
	Percent of Project	4		
Source: GDR Engineering, 2012.				

2.3.11 - Annexation and Pre-Zone

The project site is currently located outside of the Patterson city limits. The applicant has proposed annexing the project site into the City of Patterson, which requires approval of an annexation and pre-zone.

Annexation would require the City of Patterson to first approve the annexation request and pre-zone the project site for the uses envisioned by the Master Development Plan. Following City approval of these entitlements, the project application would be referred to the Stanislaus County Local Agency Formation Commission (LAFCO) for consideration and approval of the proposed annexation.

The applicant is proposing to annex the entire 1,119 gross-acre project site into the City of Patterson at one time.



Source: City of Patterson, Stanislaus County, State of California

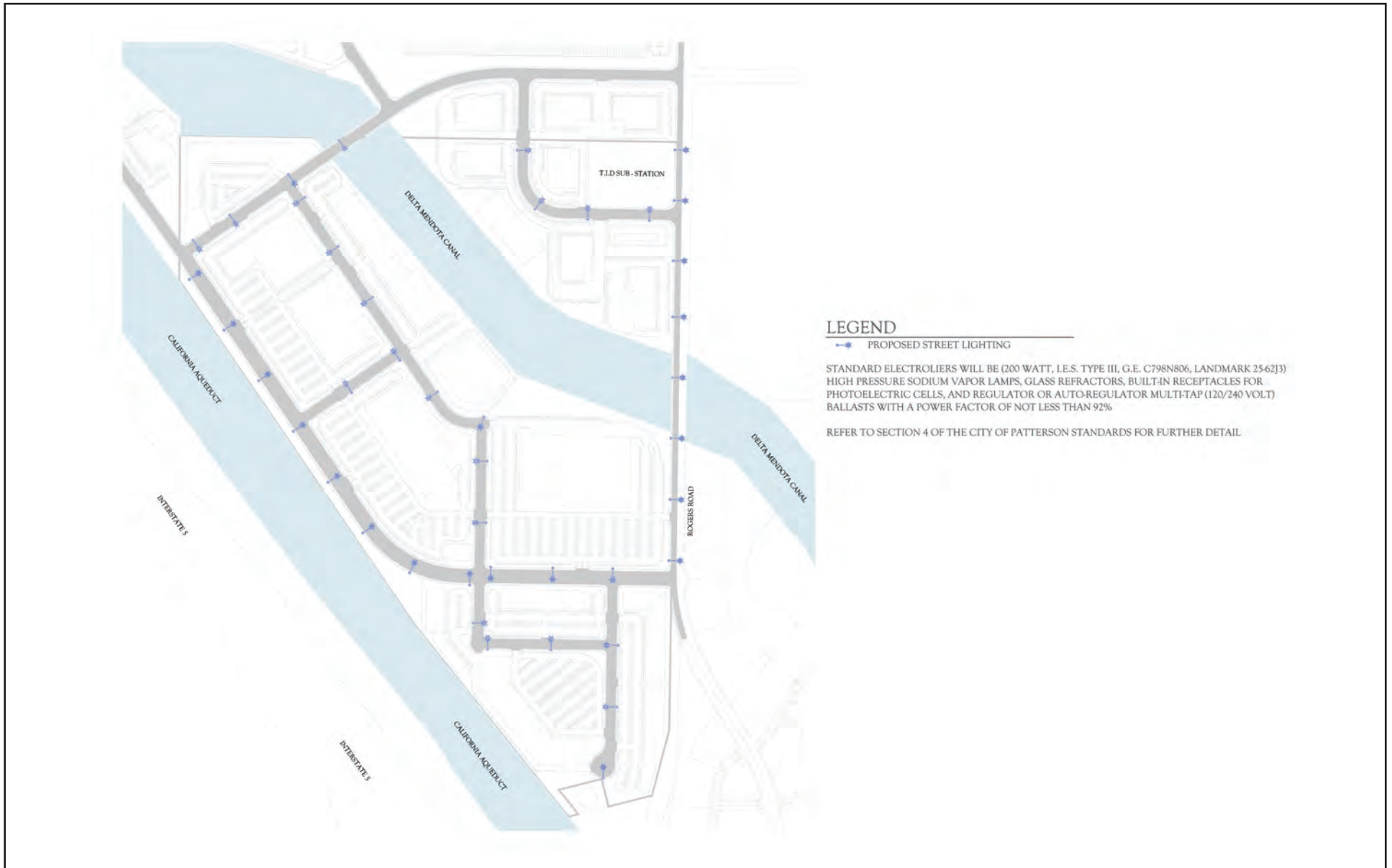


Michael Brandman Associates

17900001 • 04/2012 | 2-14a_street_light.cdr

Exhibit 2-14a Street Lighting Plan - Arambel

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



Source: City of Patterson, Stanislaus County, State of California

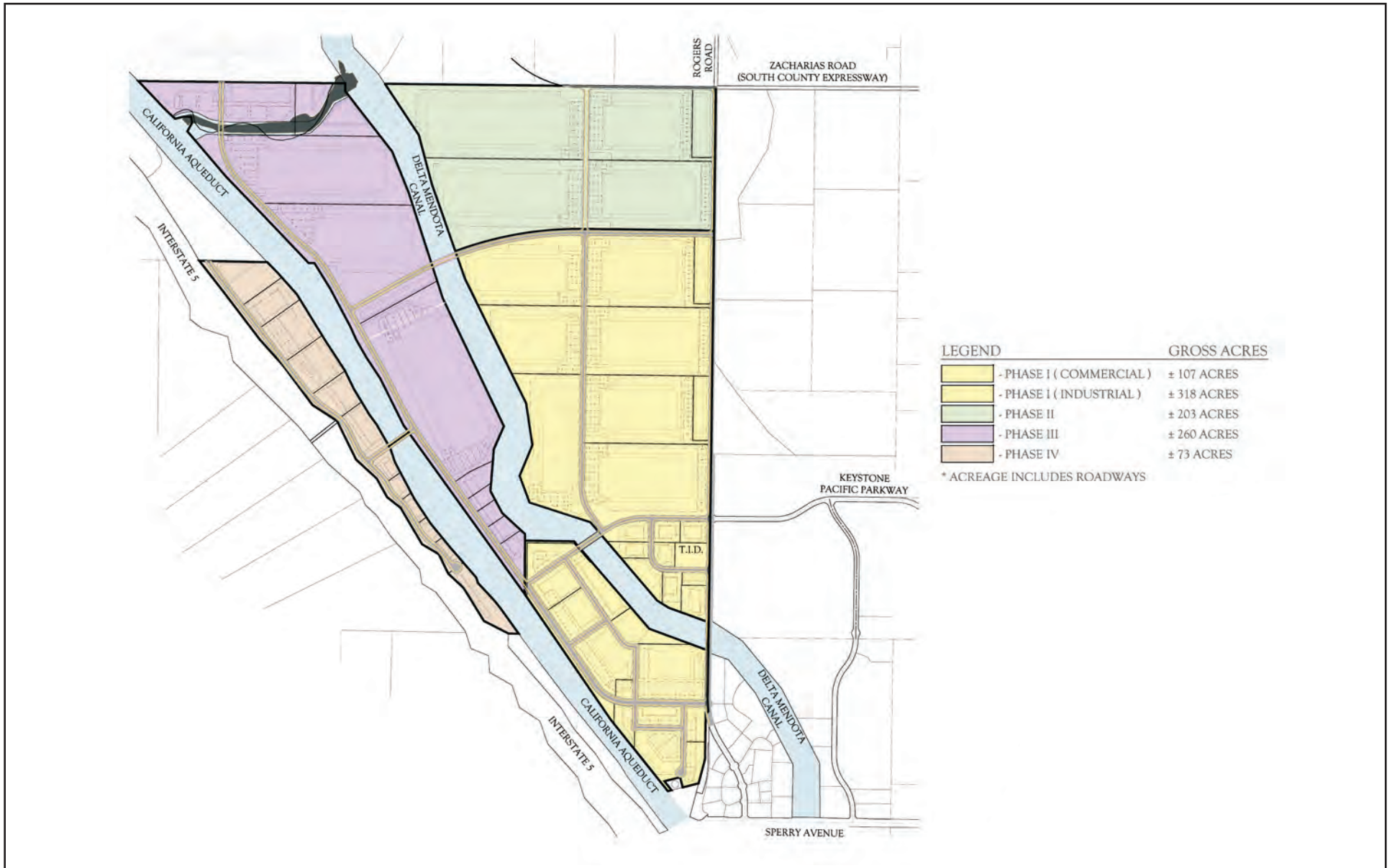


Michael Brandman Associates

17900001 • 04/2012 | 2-14b_street_light.cdr

Exhibit 2-14b Street Lighting Plan - KDN

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
 ENVIRONMENTAL IMPACT REPORT



Source: City of Patterson, Stanislaus County, State of California



Michael Brandman Associates

17900001 • 04/2012 | 2-15_phasing_plan.cdr

Exhibit 2-15 Phasing Plan

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT

2.3.12 - General Plan Amendment

The project site is currently located outside of the City of Patterson's Sphere of Influence. As part of the project entitlements, a conforming General Plan Amendment would be processed to expand the City's Sphere of Influence to encompass the 1,119 gross-acre project site, to achieve consistency with the proposed annexation request.

Approval of the Sphere of Influence expansion would occur either prior to annexation/pre-zoning or concurrently with annexation/pre-zoning. Following City approval of the Sphere of Influence expansion, it would be referred to LAFCO for consideration and approval.

2.3.13 - Out-of-Boundary Service Agreement

A portion of the project site is currently within the Del Puerto Water District. As a condition of annexation, the project site would be detached from the Water District boundaries. Therefore, the property owners intend to seek approval of an Out-of-Boundary Service Agreement with the Del Puerto Water District that would allow water deliveries for irrigation to continue up until the point that agricultural uses no longer occur onsite. The Out-of-Boundary Service Agreement requires approval from LAFCO and the Del Puerto Water District.

2.4 - Project Objectives

The objectives of the proposed project are to:

1. Create new jobs for local residents.
2. Contribute to economic growth through capital investment, the creation of new jobs, the establishment of new businesses, and the expansion of the tax base.
3. Facilitate the logical, orderly, and planned development of the project area through the use of a comprehensive planning document.
4. Promote economic development that is consistent with the long-term vision of the City of Patterson General Plan.
5. Prevent land use conflicts and discourage the premature conversion of agricultural land through the use of phasing, buffering, and other appropriate land planning techniques.
6. Provide new business park, general commercial, and light industrial uses that can be easily accessed from the existing and planned roadway network.
7. Minimize and mitigate truck travel impacts by siting the project in proximity to existing and future interchanges with Interstate 5 and the planned South County Expressway.
8. Develop new general commercial uses to cater to local residents and workers, as well as travelers on the Interstate 5 corridor.

9. Provide open space areas within the project area that serve multiple purposes such as storm drainage, recreation, and land use buffering.
10. Ensure that adequate potable water, sewer, storm drainage, roadways, and other supporting infrastructure is implemented in an efficient, logical, and timely manner to ensure that acceptable levels of public health, safety, and welfare are maintained.

2.5 - Intended Uses of this Draft EIR

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

2.5.1 - Discretionary and Ministerial Actions

Discretionary approvals and permits are required by the City of Patterson for implementation of the proposed project. The project application would require the following discretionary approvals and actions, including:

- Annexation and Pre-Zone
- General Plan Amendment (Sphere of Influence Expansion)
- Master Development Plan Adoption
- Planned Development
- Vesting Tentative Parcel Maps
- Development Agreements

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

2.5.2 - Responsible and Trustee Agencies

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

- United States Army Corps of Engineers
- United States Fish and Wildlife Service
- California Department of Transportation
- California Department of Fish and Game

- California Department of Water Resources
- California Regional Water Quality Control Board Central Valley Region
- San Luis & Delta-Mendota Water Authority
- County of Stanislaus
- Del Puerto Water District
- San Joaquin Valley Air Pollution Control District
- Stanislaus County Airports Land Use Commission
- Stanislaus Local Agency Formation Commission
- West Stanislaus County Fire Protection District

Actions that are necessary to implement the project that may be undertaken by other agencies are:

- Annexation and Sphere of Influence Expansion Approval – Stanislaus Local Agency Formation Commission
- Out-of-Boundary Service Agreement – Stanislaus Local Agency Formation Commission and Del Puerto Water District
- Issuance of Encroachment Permits – Caltrans and County of Stanislaus
- Obtain coverage under the General Stormwater Permit – Central Valley Regional Water Quality Control Board
- Approval of Onsite Wastewater Treatment Plant – Central Valley Regional Water Quality Control Board and Stanislaus County Environmental Resources Department
- Issuance of Section 404 Permit (Individual or Nationwide) – United States Army Corps of Engineers
- Issuance of Section 1602 Lake and Streambed Alteration Agreement – California Department of Fish and Game
- Issuance of Section 401 Water Quality Certification – Central Valley Regional Water Quality Control Board
- Indirect Source Review (Rule 9510) Compliance – San Joaquin Valley Air Pollution Control District
- Approval of Encroachments Within the California Aqueduct – California Department of Water Resources
- Approval of Encroachments Within the Delta Mendota Canal – San Luis & Delta-Mendota Water Authority

SECTION 3: ENVIRONMENTAL IMPACT ANALYSIS

Organization of Issue Areas

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

Issues Addressed in this EIR

The following environmental issues are addressed in Section 3:

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

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

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

Level of Significance

Determining the severity of project impacts is fundamental to achieving the objectives of CEQA. CEQA Guidelines Section 15091 requires that decision makers mitigate, as completely as is feasible, the significant impacts identified in the Final EIR. If the EIR identifies any significant unmitigated impacts, CEQA Guidelines Section 15093 requires decision makers in approving a project to adopt a statement of overriding considerations that explains why the benefits of the project outweigh the adverse environmental consequences identified in the EIR.

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

Impact Analysis and Mitigation Measure Format

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

Summary Heading of Impact

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

Impact Analysis

A narrative analysis follows the impact statement.

Significance Before Mitigation

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

Mitigation Measures

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

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

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

Significance After Mitigation

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

Abbreviations used in the mitigation measure numbering are:

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

3.1 - Aesthetics, Light, and Glare

3.1.1 - Introduction

This section describes the existing aesthetics, light, and glare setting and potential effects from project implementation on visual resources and the site and its surroundings. Descriptions and analysis in this section are based on site reconnaissance by Michael Brandman Associates, as well as review of the City of Patterson General Plan, the Patterson Municipal Code, and review of the proposed West Patterson Business Park Expansion Project Master Development Plan.

3.1.2 - Environmental Setting

Visual Character

Regional Setting

Patterson is located in the northern portion of the San Joaquin Valley within western Stanislaus County. Stanislaus County is ringed by the Diablo Range to the west and the Sierra Nevada Mountains to the east, with the San Joaquin Valley floor occupying the middle portion. The valley floor is predominately agricultural, with areas also dedicated to open space. Urban development is generally concentrated along the State Route 99 corridor in the eastern portion of the valley floor, with smaller, more rural communities located along the State Route 33 corridor in the western portion of the valley.

The City of Patterson, population 20,560, is located in the western portion of Stanislaus County at the eastern base of the Diablo Range foothills. Patterson is characterized by a “radial/spoke” pattern downtown area centered around a plaza, with newer development located on the west side. Mission-style architecture and palm trees are aesthetic features visible throughout the city. Land use outside the city limits is characterized by cultivated agricultural uses to the north, east, and south, and rugged foothills to the west.

Project Site

The project site contains cultivated agricultural land uses planted as orchards and row crops. The California Aqueduct and the Delta-Mendota Canal traverse the project site in a northwest-southeast direction. Del Puerto Creek crosses the northwestern portion of the project site. A single-family residence and a cluster of agricultural structures are located in the center of the site, adjacent to the Delta-Mendota Canal. Paved and unpaved roads provide circulation within the project site. The project site contains gently sloping relief that ranges from approximately 160 feet above mean sea level in the northeast corner to approximately 220 feet above mean sea level in the southern portion of the site. The California Aqueduct sits upon a raised embankment that is approximately 20 to 60 feet higher than the rest of the site.

A high-voltage power line parallels the west side of the California Aqueduct. Another high-voltage power line connects this line with the Turlock Irrigation District (TID) substation located along Rogers Road. Overhead utility lines are located along Rogers Road and Zacharias Road.

A 1.3-million-gallon water storage tank (Gateway Tank Site) is located in the southern portion of the project site near the California Aqueduct.

Surrounding Area***West and South***

Interstate 5 (I-5) and the California Aqueduct form the western and southern boundary of the project site. The freeway sits upon atop a raised embankment that ranges from 80 to 160 feet above the elevation of the project site, while the aqueduct sits atop a raised embankment that ranges from 20 to 60 feet above the elevation of most of the project site. The Diablo Range foothills are located west of the freeway.

Unobstructed views are available of the project site from both I-5 and the California Aqueduct.

North

Zacharias Road forms the northern boundary of the project site. North of the roadway are orchards. Reaches of the California Aqueduct, Delta-Mendota Canal, and Del Puerto Creek extend north of the project site.

Partially obstructed views are available of the project site from the properties to the north, due to intervening vegetation.

East

Rogers Road and the Villa del Lago highway commercial center form the eastern boundary of the project site. Land uses east of Rogers Road consist of orchards, row crops, and distribution centers associated with the existing West Patterson Business Park. The Villa del Lago highway commercial center is located south of the Delta-Mendota Canal and primarily consists of visitor-serving commercial uses, including hotels, gas stations, restaurants, and a recreational vehicle park.

On the west side of Rogers Road, but not a part of the project site, is an approximately 3-acre Turlock Irrigation District electrical substation.

Partially obstructed views are available of the project site from the properties to east, due to intervening vegetation and structures.

State Scenic Highways

I-5 is classified as an “officially designated” state scenic highway within Stanislaus County. This is a State designation.

Light and Glare***Project Site***

The project site contains limited sources of light and glare. Exterior lighting associated with the structures exists in the center of the project site; however, these sources are largely screened from

public view by the orchards within the project site. Additionally, vehicular headlights from vehicles using the roadways within the project site are sources of intermittent light and glare.

Surrounding Land Uses

Exterior lighting and illuminated signage exists within the Villa del Lago highway commercial center and West Patterson Business Park east of the project site. The most visible source of nighttime light and glare within this area is the Villa del Lago pylon sign located near the I-5 frontage, which can be seen from several miles away. In addition, street lighting is present along various roads within this area. Vehicular headlights from vehicles traveling on I-5, Sperry Avenue, and Rogers Road also serve as near-constant sources of light and glare.

3.1.3 - Regulatory Framework

State

California Scenic Highway Program

The California Scenic Highway Program is intended to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. A highway may be designated as scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. A scenic corridor is the land generally adjacent to and visible from the highway and is identified using a motorist's line of vision. The corridor protection program seeks to encourage quality development that does not degrade the scenic value of the corridor.

State scenic highways are classified as either "eligible" or "officially designated." The status of a State Scenic Highway changes from eligible to officially designated when the local jurisdiction adopts a scenic corridor protection program, applies to the California Department of Transportation (Caltrans) for scenic highway approval, and receives notification from Caltrans that the highway has been officially designated as a scenic highway. When a city or county nominates an eligible scenic highway for official designation, it must identify and define the scenic corridor of the highway. The agency must also adopt ordinances to preserve the scenic quality of the corridor or document such regulations that already exist in various portions of local codes. These ordinances make up the scenic corridor protection program. Minimum requirements for scenic corridor protection include:

- Regulation of land use and density of development
- Detailed land and site planning
- Control of outdoor advertising (including a ban on billboards)
- Careful attention to and control of earthmoving and landscaping
- Careful attention to design and appearance of structures and equipment

Local

City of Patterson

General Plan

The City of Patterson General Plan sets forth the following goals and policies relevant to aesthetics, light, and glare:

- **Goal LU-1:** To provide for orderly, well-planned, and balanced growth consistent with the limits imposed by the city's infrastructure and environmental constraints.
- **Policy LU-1.6:** Small town character. The City shall seek to preserve Patterson's traditional small-town qualities and agricultural heritage, while increasing its residential and employment base.
- **Policy LU-1.7:** Preferences for the timing of urban development. In general, the preferred timing of urban development in accordance with the General Plan is as follows:
 - a. First Priority—Vacant or underutilized areas within the current City limits;
 - b. Second Priority—Vacant or underutilized areas within the City's currently adopted sphere of influence;
 - c. Third priority—Vacant or underutilized areas within the General Plan area.
- **Policy LU-1.12:** Status of land prior to urban development. Land within the General Plan Area shall ultimately be developed to urban standards described in Part I – Land Use and Development Standards. Pending connection to City services, such land shall remain in agricultural, open space, or other low intensity uses.
- **Goal CD-1:** To promote the development of a coherent and distinctive physical form and structure that reflects Patterson's small-town qualities and agricultural heritage.
- **Policy CD-1.2:** Enhance distinctiveness. The City shall endeavor to maintain and enhance the distinctiveness and integrity of neighborhoods and districts in Patterson.
- **Policy CD-1.7:** Maintain a distinct urban edge. The City shall seek to maintain a distinct agricultural definition to the urban edge of the city as a means of emphasizing Patterson's small-town qualities and agricultural heritage.
- **Policy CD-1.8:** Green building practices. The City supports the use of green building practices in the planning, design, construction, management, renovation, operations, and demolition of all private buildings and projects, including:
 - Land planning and design techniques that preserve the natural environment and minimize disturbance of the land.
 - Site development to reduce erosion, minimize paved surfaces and runoff and protect vegetation, especially trees.
 - Water conservation indoors and outdoors.
 - Energy efficiency in heating/cooling systems, appliances, lighting and the building envelope.
 - Selection of materials based on recyclability, durability and the amount of energy used to create the material.

- Waste reduction, reuse and recycling during construction and throughout the life of the project.
- Other new aspects of green design and construction included in LEED™ or other certification programs.
- Control nighttime lighting to lower energy use, reduce glare, and prevent illumination of the night sky.
- **Goal CD-3:** To preserve the existing community character and fabric and promote the development of neighborhoods and districts that emphasize pedestrian convenience.
- **Policy CD-3.3:** Pedestrian amenities for commercial areas. New commercial and office development shall promote pedestrian convenience, especially in the downtown.
- **Policy CD-3.4:** Site design. The City shall encourage site design that increases the convenience, safety and comfort of people using transit, walking or cycling.
- **Goal CD-4:** To maintain and enhance the quality of the Patterson's landscapes and streetscapes.
- **Policy CD-4.1:** Street trees. The City shall endeavor to protect the urban forest created by mature trees in existing developed areas and in newly developing areas.
- **Policy CD-4.2:** Extending the established pattern of landscaping. The City shall require that all new development incorporate the planting of trees and other vegetation that extend the vegetation pattern of older adjacent neighborhoods into new development.
- **Policy CD-4.3:** Boulevard planting. The City shall extend and reinforce major street tree/boulevard plantings to enhance the visual character of special and important streets within Patterson.

Municipal Code

Signage

Municipal Code Chapter 18.90 establishes regulations that limit the placement, type, size, maintenance, and number of signs allowed within the City. The allowable sign area for the largest wall sign on a building façade shall not exceed 7 percent of the area of the building façade on which the sign is mounted. In cases where illuminated signs are proposed, the Municipal Code encourages this to be accomplished via lights shining on the sign or individually mounted, internally lit letters. A sign permit or, if applicable, approval of a master sign plan is required.

Freestanding shopping center identification (pylon) signs are limited to 8 feet in height, and freestanding monument signs also are limited to 8 feet in height.

Shopping centers are allowed to have a center identification sign of up to 30 feet in height. Additionally, shopping centers are allowed to have a freeway-oriented sign, provided the following requirements are met:

1. Permit Requirement. Conditional use permit approval is required for a freeway-oriented sign.
2. Where Allowed. A freeway-oriented sign may be approved only on a parcel adjacent to the California Aqueduct within a commercial zoning district for a multi-tenant site with a gross floor area of twenty-five thousand square feet or more.
3. Required Findings. The approval of a conditional use permit for a freeway-oriented sign shall require that the commission first find that the use or site cannot be adequately identified by other signs permitted within the applicable zoning district, in addition to the other findings required for conditional use permit approval by Chapter 18.76 of this title.
4. Height Limit. No freeway-oriented sign shall exceed a maximum height of thirty feet, unless the conditional use permit allows greater height, as follows.
 - a. Criteria for Approval. A sign with a height greater than thirty feet may be approved if the commission determines that the applicant has demonstrated that an overcrossing of Interstate 5, or its ramps, or trees or vegetation will seriously obstruct the visibility of the proposed sign from the northbound or southbound lanes of Interstate 5.
 - b. Procedure for Determining Allowed Height. The commission shall approve no more additional sign height over thirty feet than the minimum necessary for the message area of the sign to clear the identified visual obstruction. The determination of maximum height by the commission shall be based on the following procedure, which shall occur prior to the public hearing on the use permit.
 - (1) The applicant shall arrange for a boom truck with a sign target to be on the site at the location of the proposed sign, with a tape measure attached to the top of the target so that an accurate ground reading of height can be determined.
 - (2) City staff will go to the site, pick up the applicant or applicant's representative, and drive Interstate 5 north and south of the target on the site, to visually verify that the target is set at the minimum height necessary to clear the visual obstruction.
 - (3) City staff will report their findings to the commission in the staff report on the conditional use permit.

Architectural and Site Plan Review

Section 18.94 of Chapter 18 of the City of Patterson Municipal Code requires architectural and site plan review of development in order to promote more comprehensive and proficient design and planning. Such review promotes orderly and compatible development, encourages appropriate uses of land within the City, and ensures site development (building appearance, landscaping, signage) is compliant with applicable standards, thereby maximizing aesthetic considerations and minimizing adverse environmental impacts.

Community Design Guidelines

The Community Design Guidelines are intended to describe, and inform project applicants of, the City's expectations and preferences for the quality and character of new development. The Planning Commission and City Council consider a project's consistency with the Community Design Guidelines during the Design Review process. Both bodies are afforded discretion in determining the applicability of Community Design Guidelines on a case-by-case basis in recognition that not all design criteria may be workable or appropriate for each project.

Key design criteria include:

- Keep Patterson architecturally distinctive, don't let it become "anywhere USA."
 - Maintain a high quality of craftsmanship in development through use of authentic building styles, design elements, and materials.
 - Integrate local cultural and historical themes into building and site design where appropriate.
 - Pay attention to gateways and key corridors to enhance the overall city image.
 - Design for surrounding context and scale of urban form and land uses.
 - Protect the scale and character of older neighborhoods, and cultural context of the city.
 - Require design excellence for infill and redevelopment sites, especially in the downtown area.
 - Minimize the use of "stock" plans and design in corporate and franchise architecture.
 - Encourage traditional neighborhood building and street patterns.
 - Integrate public squares and art that respond to local cultural and historical themes in development.
- Design for the pedestrian scale in appropriate areas.
 - Encourage pedestrian oriented buildings and site planning.
 - Incorporate design elements that respond to environmental conditions such as wind, sun, shade, etc. to protect and shelter pedestrians, and that will provide an enjoyable pedestrian experience.
 - Encourage an appropriate scale of building height to street width in commercial areas. Prohibit or minimize parking between buildings and the street.
- Respect the natural environment by protecting natural resources and integrating the natural environment into building and site planning, where appropriate.
 - Maintain views of the foothills west of the city.
 - Continue streetscape landscaping.
 - Control outdoor lighting to provide necessary security, but not create spillage onto adjacent properties or interfere with views of night skies.

3.1.4 - Methodology

Michael Brandman Associates (MBA) evaluated potential project impacts on aesthetics, light, and glare through site reconnaissance and review of applicable plans and policies. MBA personnel visited the project site and surrounding area in July 2011 to document the site conditions through photographs and notation. The City of Patterson's General Plan, Municipal Code, and Design Guidelines were reviewed to determine applicable policies and design requirements for the proposed project. The assessment of visual and light and glare impacts was largely guided by the standards set forth in the City's adopted documents, as well as MBA's experience with these analytical areas.

3.1.5 - Thresholds of Significance

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

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

3.1.6 - Project Impacts and Mitigation Measures

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

Scenic Vistas

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

Impact Analysis

This impact will assess the potential for the proposed project to have a substantial adverse effect on a scenic vista.

West Patterson Business Park Expansion Project

The City of Patterson Community Design Guidelines identify the maintenance of views of the Diablo Range foothills west of the city as a desired objective. As such, this impact analysis will address impacts views of the foothills as a result of the development of the proposed project.

The project site is located in the western portion of the Patterson area, adjacent to I-5. The project site ranges in elevation from approximately 160 feet above mean sea level in the northeast corner (Rogers Road/Zacharias Road) to approximately 220 feet above mean sea level in the southern

portion of the site near the Gateway Tank Site; refer to Exhibit 3.1-1. The freeway sits upon a raised embankment of approximately 300 feet above mean sea level or 80 to 140 feet above the project site. As set forth in the Master Development Plan, building height is limited to 45 feet, and along Rogers Road, all buildings and parking lots must be set back a minimum of 20 feet from the property line or right-of-way plan line, whichever is greater. Thus, when the building height limit, minimum setback requirement, and the height of the I-5 embankment are accounted for, project structures would generally appear lower than the I-5 embankment from vantage points immediately east of the project site (i.e., Rogers Road and points east). As such, views of the Diablo Range foothills would be maintained in accordance with the City of Patterson Community Design Guidelines. Impacts would be less than significant.

Offsite Utility Alignments

All three offsite utility alignments would be located underground; as such, they would not have the potential to have a substantial adverse effect on a scenic vista.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Scenic Highways and Roadways

Impact AES-2:	The proposed project would not substantially damage scenic resources within a state scenic highway.

Impact Analysis

This impact will assess the potential for the proposed project to substantially damage scenic resources within a state scenic highway.

West Patterson Business Park Expansion Project

I-5 is designated as a State Scenic Highway within Stanislaus County. The project site abuts I-5 and is visible from the freeway. The project site ranges in elevation from approximately 160 feet above mean sea level in the northeast corner (Rogers Road/Zacharias Road) to approximately 220 feet above mean sea level in the southern portion of the site near the Gateway Tank Site; refer to Exhibit 3.1-1. The freeway sits upon a raised embankment of approximately 300 feet above mean sea level or 80 to 140 feet above the project site.

The proposed project consist of the development of approximately 13.47 million square feet of new business park, general commercial, and light industrial uses on approximately 880 net acres. The

proposed project would permanently and irreversibly alter views from I-5, although this change in itself is not considered significant unless the quality of viewscape is substantially diminished.

The proposed project represents the continued development of both the West Patterson Business Park and Villa del Lago highway commercial center. Both existing land uses have steadily developed during the past decade and are readily visible from I-5. Thus, the proposed project would be in visual context with its surroundings. Furthermore, because the proposed project would be phased over a 20- to 30-year period, visual change would occur on an incremental basis and portions of the project site would continue to remain in agricultural production for years after the first phase is completed.

Finally, the proposed project would be guided by a Master Development Plan that establishes land use and development standards, including design guidelines, for new development. Relevant standards that pertain to I-5 include:

- Limiting building height to 45 feet above grade.
- Design techniques to reduce the “box like” appearance of large buildings, including use of articulated walls, treatments, projections, colors, and textures to break up building mass.
- Requiring landscaping for all project uses, including screening of parking areas and minimum tree planting ratios.
- A prohibition on outdoor storage unless it occurs within an enclosure.
- All signs must comply with the City’s sign ordinance, which requires that a sign program be submitted for review and approval for all new development.
- Orienting loading areas and trash enclosures away from public view or screening them with walls or landscaping.

Refer to Impact AES-3 for further discussion of the Master Development Plan.

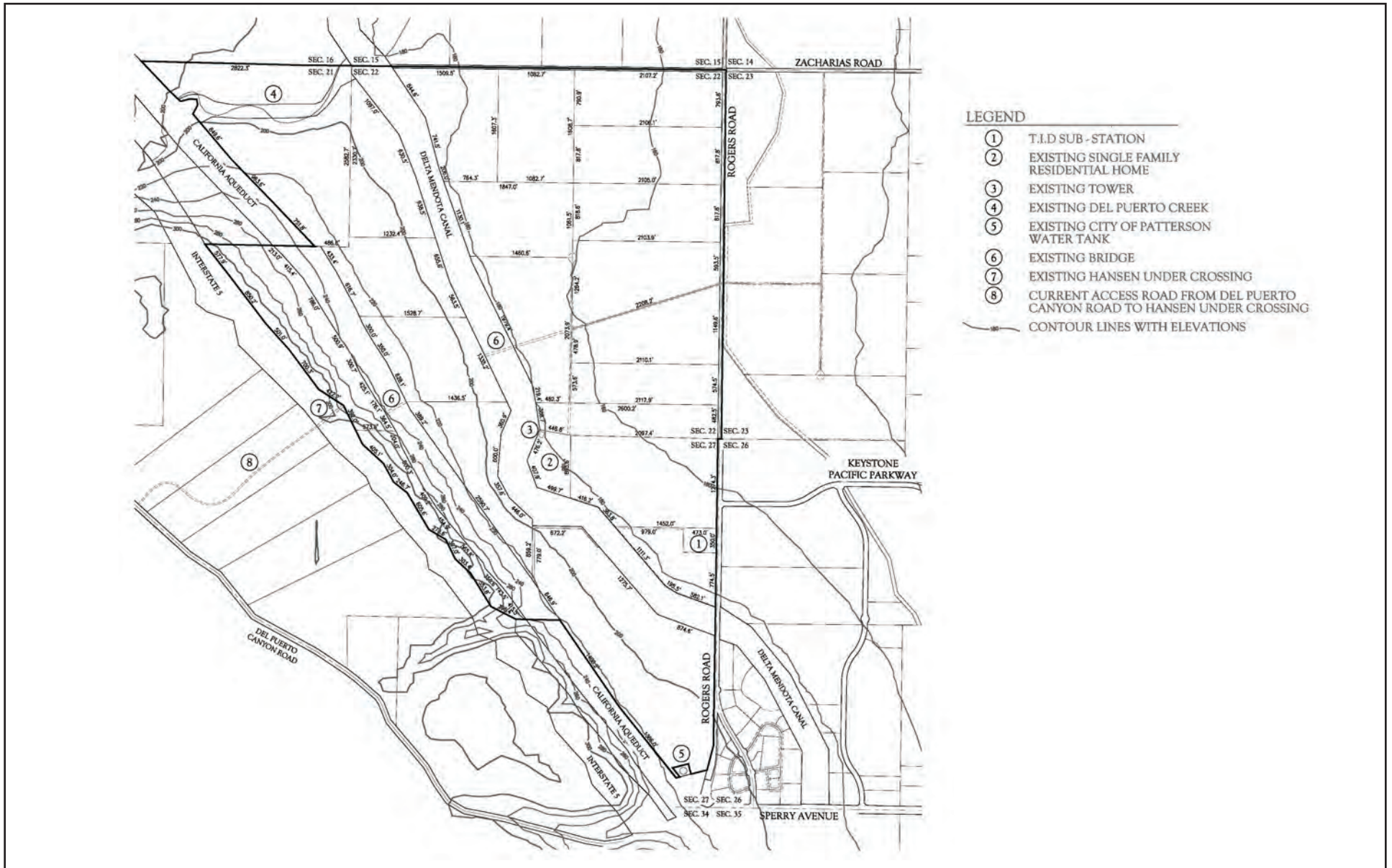
These standards would ensure that the development contemplated by the proposed project implements a contemporary design that is compatible with I-5’s status as a state scenic highway. Furthermore, no significant individual resources such as native trees, rock formations, or historic buildings would be damaged by the proposed project. Impacts would be less than significant.

Offsite Utility Alignments

All three offsite utility alignments would be located underground; as such, they would not have the potential to substantially damage scenic resources within a state scenic highway.

Level of Significance Before Mitigation

Less than significant impact.



Source: City of Patterson, Stanislaus County, State of California



Michael Brandman Associates

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Exhibit 3.1-1 Existing Topography

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Visual Character

Impact AES-3:	The proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings.

Impact Analysis

This impact will assess the potential for the proposed project to substantially degrade the existing visual character or quality of the site and its surroundings.

West Patterson Business Park Expansion Project

The proposed project consist of the development of approximately 13.47 million square feet of new business park, general commercial, and light industrial uses on approximately 880 net acres. The proposed project would permanently and irreversibly alter the visual character of the project site, although this change in itself is not considered significant unless the quality of viewscape is substantially diminished.

This impact analysis will assess the proposed project’s potential visual character impacts in several ways, including consistency with the City of Patterson General Plan, evaluation of the proposed Master Development Plan’s standards for land use and development, and the visual compatibility of the project with its surroundings.

General Plan Consistency

The City of Patterson General Plan serves as a “blueprint” for new development within the City of Patterson. The General Plan Land Use diagram designates properties within the Planning Area for a number of different urban, semi-urban, and non-urban uses and sets forth goals and policies to achieved desired results from future development and land use activities. The General Plan designates most of the project site “Light Industrial,” with smaller areas designated “General Commercial.”

The portion of the project site designated “Light Industrial” coincides with all portions of the Arambel Business Park and KDN Retail Center/Business Park contemplated for business park or light industrial use. The proposed Master Development Plan identifies permitted uses within the Business Park and Light Industrial portions of the project as consisting of call centers, electronic repair and assembly, research and development, manufacturing, packaging, software development, warehouse, and wholesale distribution. All of these end uses are considered acceptable land use activities within the “Light Industrial” designation.

The portion of the project site designated “General Commercial” coincides with the portion of the KDN Retail Center/Business Park contemplated for general commercial use. The proposed Master Development Plan identifies permitted uses within the General Commercial portion of the project as consisting of apparel shops, appliance stores, banks and other financial institutions, department stores, drug stores, fast food restaurants, hotels and motels, markets (food), retail stores, sporting goods stores, and similar uses. Conditional uses include automobile sales, automobile service stations, bars and cocktail lounges, equipment rental, liquor stores, professional and administrative offices, and other similar uses. All of these end uses are considered acceptable land use activities within the “General Commercial” designation.

Because the project’s contemplated end uses are consistent with the corresponding General Plan land use designations, it can be reasoned that the development and land use activities are consistent with the City of Patterson’s long-term vision for the project site.

Master Development Plan

The proposed project would be guided by a Master Development Plan, officially known as the “West Patterson Business Park Expansion Project Master Development Plan.” The Master Development Plan establishes the regulatory framework that will govern development of the proposed project. The Master Development Plan is intended to supplement the General Plan by establishing area-specific development standards and design guidelines that will apply to new development within the plan boundaries.

The Master Development Plan sets forth numerous guidelines that pertain to general qualities of design, colors and materials, site planning, parking, vehicular access, signs, landscaping, walls, screening, lighting, arterials and streetscapes. In addition, the Master Development Plan establishes detailed design guidelines for the general commercial component of the project, including standards for general principles of design, building materials, colors, windows, signs, site planning, landscaping, screening, refuse/storage/equipment areas, outdoor storage/displays/sales, lighting, walls and fences, and public art. Relevant design guidelines are summarized below.

- Limiting building height to 45 feet above grade.
- Design techniques to reduce the “box like” appearance of large buildings, including use of articulated walls, treatments, projections, colors, and textures to break up building mass.
- Requiring landscaping for all project uses, including screening of parking areas and minimum tree planting ratios.
- A prohibition on outdoor storage unless it occurs within an enclosure.
- All signs must comply with the City’s sign ordinance, which requires that a sign program be submitted for review and approval for all new development.

- Orienting loading areas and trash enclosures away from public view or screening them with walls or landscaping.

Exhibits 2-6a through 2-6c provide conceptual elevations of three separate building prototypes that reflect the aforementioned design guidelines. The proposed project's structures would employ contemporary architecture typical of that for business/industrial parks and general commercial retail centers. Buildings would be primarily constructed of concrete tilt-up panels and painted "Tony Taupe," "Accessible Beige," "Urbane Bronze," or similar colors. The buildings would also feature 12-foot by 14-foot roll-up doors, 9-foot by 10-foot dock doors, and 3-foot by 7-foot traditional doors.

These standards would ensure that the development contemplated by the proposed project implements a contemporary design that is visually compatible with the General Plan's vision for the project site and surrounding land uses.

Utility Infrastructure

The proposed project involves the potential development of two significant, aboveground utility infrastructure facilities: a 1.4-million-gallon water storage tank and a privately owned and operated, onsite wastewater treatment plant.

The water storage tank would be located in the center of the project site near the Delta-Mendota Canal, either near the Keystone Pacific Parkway extension or near the East-West Internal Roadway. Both potential locations would be within the light industrial portion of the Arambel Business Park. Buildings in this area would range from approximately 500,000 to 1.1 million square feet in area. Thus, 1.4-million-gallon water storage tank would be proportionate in appearance and size to its surroundings.

The onsite wastewater treatment plant would also be located near the Delta-Mendota Canal on a 5.45-acre site near the future East-West Internal Roadway. (This is one of the two sites the 1.4-million-gallon water storage tank could be developed on.) As previously noted, buildings in this area would range from approximately 500,000 to 1.1 million square feet in area; therefore, a wastewater treatment plant would proportionate in appearance and size to its surroundings. Furthermore, this facility would be surrounded by landscaping to soften its visual appearance.

Compatibility With Surrounding Land Uses

The proposed project is immediately adjacent to the West Patterson Business Park and Villa del Lago highway commercial center (east and south), as well as rural and agricultural uses (west and north).

Both the West Patterson Business Park and Villa del Lago highway commercial center are characterized by contemporary development. The proposed project would maintain consistency with the business park and highway commercial center in terms of end uses and design characteristics and, therefore, would be visually compatible.

The rural uses to the west in Del Puerto Canyon are visually separated by I-5, which are previously noted, sits upon a raised embankment approximately 50 feet above the project site. As such, the freeway serves as a distinct visual barrier between the project site and the uses, which minimizes the potential for significant visual change.

The agricultural uses to the north of the project site on the opposite side of Zacharias Road are currently in unincorporated Stanislaus County and within the City of Patterson General Plan Planning Area, but outside the City's current Sphere of Influence. These uses are designated for General Commercial and Light Industrial use by the City of Patterson General Plan. Furthermore, the General Plan contemplates that the future South County Expressway would following the existing alignment of Zacharias Road. Thus, the uses on the north side of Zacharias Road are ultimately anticipated to convert to urban uses and would be visually separated by the expressway.

Conclusion

In summary, the proposed project is consistent with the City of Patterson General Plan long-term land use vision for the project site; the proposed Master Development Plan sets forth detailed design standards to guide the development of the project; and, finally, the project is compatible with surrounding land uses. For these reasons, impacts would be less than significant.

Offsite Utility Alignments

All three offsite utility alignments would be located underground; as such, they would not have the potential to substantially degrade the existing visual character or quality of the site and its surroundings.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Light and Glare

Impact AES-4:	The proposed project would not introduce new sources of substantial light or glare that would adversely affect day or nighttime views in the area.

Impact Analysis

This impact will assess the potential for the proposed project to create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

West Patterson Business Park Expansion Project

The proposed project consist of the development of approximately 13.47 million square feet of new business park, general commercial, and light industrial uses on approximately 880 net acres. The proposed project would introduce new sources of lighting, including building-mounted light fixtures, freestanding light fixtures (streetlights and parking lot lights), and illuminated signage. The Master Development Plan establishes the following standards that pertain to new sources of light and glare:

- Outdoor lighting should be designed to illuminate at the minimum level necessary for safety and security, and to avoid harsh contrasts in lighting levels between the project and adjacent properties to the maximum extent possible. In all cases, lighting should be designed to minimize glare by, among things, recessing the light within the fixture.
- Lighting fixtures should not appear as an afterthought but should be integrated with the design of the buildings, parking and landscaping.
- Lighting for parking areas and vehicular circulation lighting should be cut-off type fixtures that contain light on the intended areas. Bollard type lighting for pedestrian activity areas may use other light sources.
- In accordance with the City’s objective of encouraging pedestrian-level lighting in commercial areas, light fixtures in parking lots should not exceed 20 to 25 feet in overall height from the finished grade of the parking facility, except that light standards in large-scale commercial development may be taller so long as it can be demonstrated that such lighting will not adversely affect surrounding residential neighborhoods.
- The design, size, and placement of outdoor lighting fixtures on buildings and in parking lots should be in keeping with the architectural style of the buildings. More, smaller-scale parking lot light instead of fewer, overly tall and large parking lot lights should be installed. Outdoor light fixtures mounted on building walls should relate to the height of pedestrians. All light fixtures should be directed downward and shielded so that the light source itself is not visible and does not spill over to adjacent properties.
- Bollard-type luminaries 3 to 4 feet in height are encouraged as pedestrian lighting.
- Roof lights, wall washes, lighted roof panels, and other methods of illuminating buildings are discouraged, including neon.

These standards would ensure that the proposed project’s lighting provides necessary illumination levels for safety and security, while also implementing measures intended to limit the potential for spillage onto adjoining roadways and properties. Impacts would be less than significant.

Offsite Utility Alignments

All three offsite utility alignments would be located underground; as such, they would not have the potential to create new sources of light and glare.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

3.2 - Agricultural Resources

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

3.2.1 - Environmental Setting

Regional Setting

Agriculture is a primary economic activity in Stanislaus County. The California Department of Conservation Farmland Mapping and Monitoring Program indicated that approximately 41 percent of the County's land area was in cultivated agricultural production in 2008. An overview of local agricultural activities follows.

Agricultural Economy

Stanislaus County has consistently maintained its position as the sixth largest agricultural economy in the State during the past 5 years, as measured by production value. Between 2005 and 2009, the production value of Stanislaus County crops increased from \$1.98 billion to \$ 2.31 billion. Table 3.2-1 summarizes agricultural production in the County between 2005 and 2009.

Table 3.2-1: Stanislaus County Agricultural Economy (2005–2009)

Year	\$ Value (billions)	Rank in State
2009	2.31	6
2008	2.47	6
2007	2.41	6
2006	2.15	6
2005	1.98	6

Source: United States Department of Agriculture, 2006–2010.

Table 3.2-2 summarizes the top 10 agricultural commodities produced in Stanislaus County by dollar value in 2010. Milk is the leading commodity, with a production value of \$599 million.

Table 3.2-2: Stanislaus County Crop Summary (2010)

Rank	Commodity	\$ Production Value (millions)
1	Milk	599
2	Almonds	390

Table 3.2-2 (cont.): Stanislaus County Crop Summary (2010)

Rank	Commodity	\$ Production Value (millions)
3	Chickens	308
4	Cattle and Calves	167
5	Tomatoes	148
6	Walnuts	116
7	Silage	108
8	Deciduous Fruit and Nut Nursery	76
9	Turkeys	72
10	Peaches	55
Note: Production values rounded to nearest million Source: Stanislaus County Agricultural Commissioner, 2011.		

Farmland Classifications

The California Department of Conservation Farmland Mapping and Monitoring Program classifies farmland based on agricultural productivity characteristics, as follows:

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

Table 3.2-3 summarizes farmland acreage in Stanislaus County between 2000 and 2008. As shown the table, farmland acreage increased by more than 13,000 acres between 2000 and 2008. During this same period, the County's population increased by more than 70,000 residents or 15 percent, indicating that urban development has not impaired local agriculture.

Table 3.2-3: Stanislaus County Farmland Summary

Classification	Acres				
	2000	2002	2004	2006	2008
Prime Farmland	264,121	260,372	262,045	256,605	256,165
Unique Farmland	59,850	61,556	70,137	75,444	81,368
Farmland of Statewide Importance	30,715	30,073	29,747	29,925	31,448
Farmland of Local Importance	31,848	29,537	35,050	33,706	31,159
Farmland Total	386,534	381,538	396,979	395,680	400,140
Source: California Department of Conservation, 2005–2009.					

Project Site

Land Classifications

As shown in Exhibit 3.2-1, the project site is mapped as containing 749.14 acres of Prime Farmland, 278.17 acres of Unique Farmland, and 81.38 acres of Farmland of Statewide Importance, for a total of 1,108.69 acres of Important Farmland.

It should be noted that areas of the project site designated Prime Farmland, Unique Farmland, and Farmland of Statewide Importance overlap with the California Aqueduct and Delta-Mendota Canal. As such, the actual amount of Important Farmland acreage is substantially less than 1,108.69 acres.

Soils

Exhibit 3.2-2 provides the soil mapping for the project site. Table 3.2-4 summarizes the soils that comprise the project site.

Table 3.2-4: Project Site Soils Summary

Number – Soil Unit	Acres	Percent of Project Site	Land Capability Classification	Store Index Rating
100 – Capay Clay, 0-2 percent slopes	105.73	10%	IIs	40
128 – Water	247.64	22%	—	—
130 – Stomar Clay Loam, 0-2 percent slopes	306.93	28%	IIs	68
140 – Zacharias Clay Loam, 0-2 percent slopes	228.45	21%	I	81
142 – Zacharias Gravelly Loam, 0-2 percent slopes	20.14	2%	IIs	67
144 – Zacharias Gravelly Loam, 2-5 percent slopes	0.55	< 1%	Ile	60
145 – Zacharias Clay Loam, 2-5 percent slopes	81.37	7%	Ile	81

Table 3.2-4 (cont.): Project Site Soils Summary

Number – Soil Unit	Acres	Percent of Project Site	Land Capability Classification	Store Index Rating
147 – Zacharias Gravelly Loam, 0-2 percent slopes, rarely flooded	6.45	< 1%	IIw	63
210 – Cortina Gravelly Clay Loam, 0-5 percent slopes, rarely flooded	81.36	7%	IIIs	51
255 – Calla-Carbona complex, 30-50 percent slopes	31.65	3%	Vie	26
270 – Elsalado Fine Sandy Loam, 0-2 percent slopes, rarely flooded	2.02	< 1%	I	95
Notes: Percentages rounded to nearest whole number. Land Capability Classification reflects the agricultural value of the soil, wherein I is the highest and VIII is the lowest. Storie Index is a rating that reflects agricultural productivity of the soils; the index is based on a scale of 0 to 100, with 0 signifying the lowest quality and 100 signifying the highest quality. Source: United States Department of Agriculture, Natural Resources Conservation Service, 2011.				

Williamson Act Contracts

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

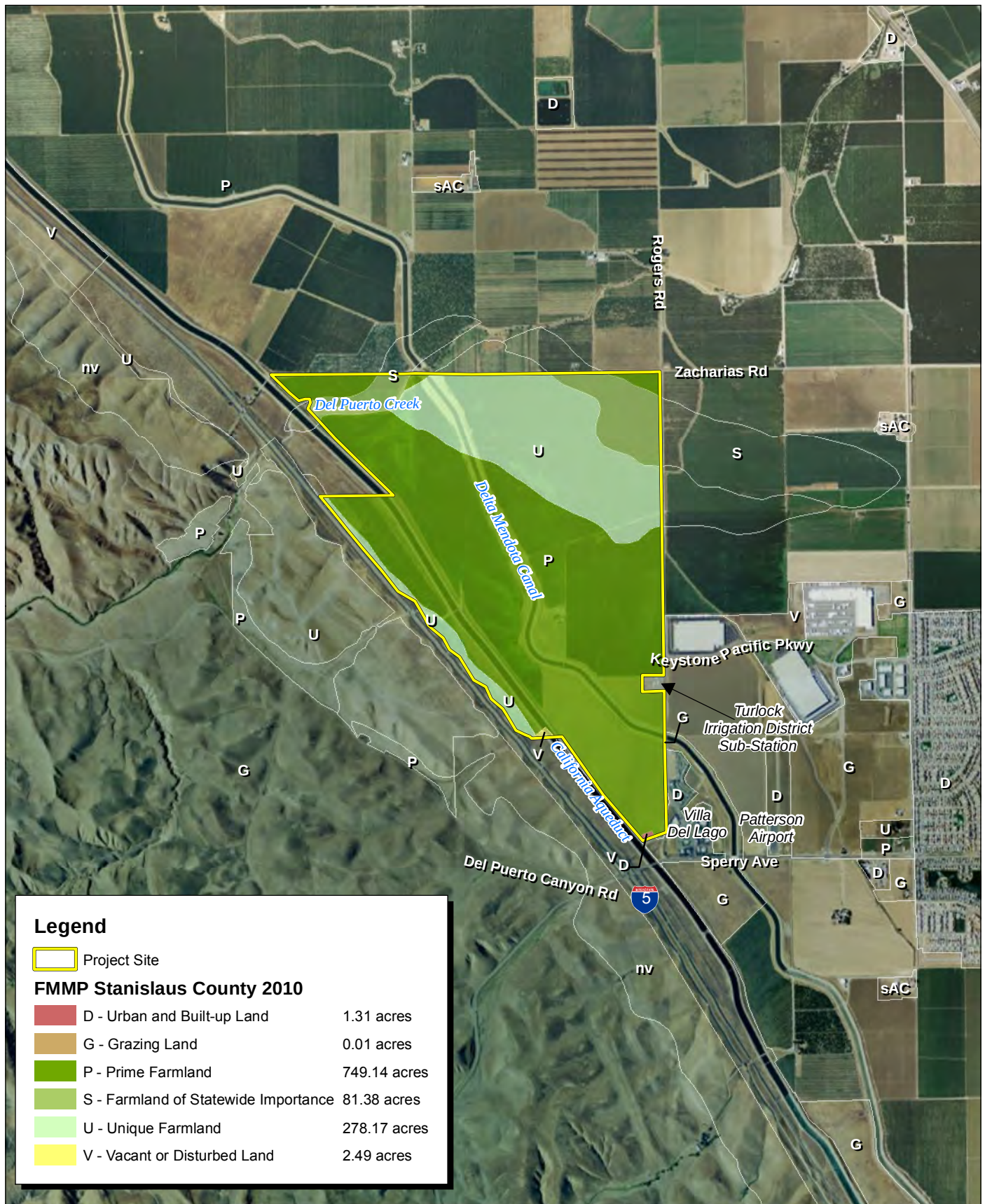
Two of the 26 parcels that comprise the project site are encumbered by active Williamson Act contracts. The two contracts expire on December 31, 2012 and December 31, 2014, respectively. Table 3.2-5 summarizes the status of the two Williamson Act contracts.

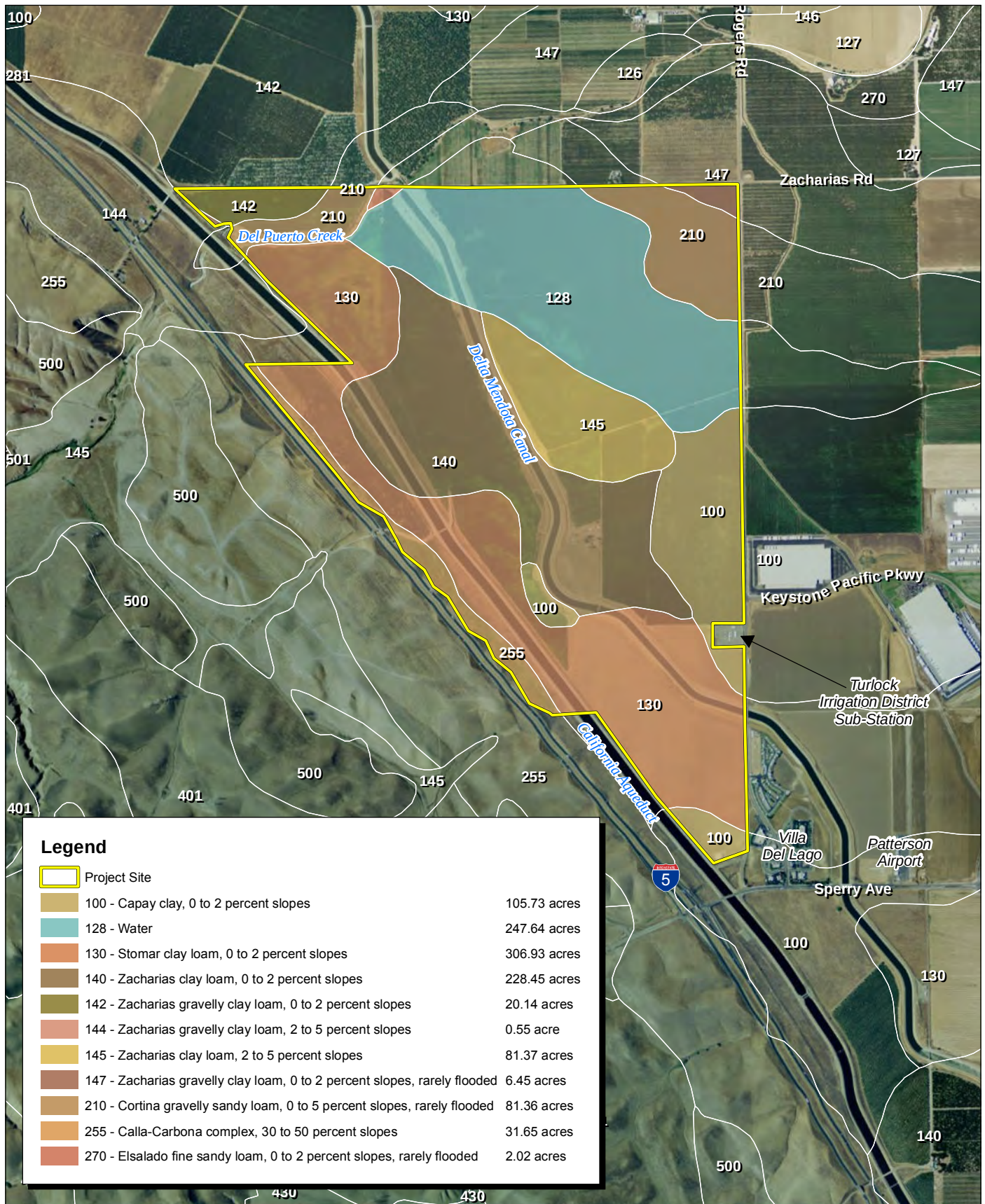
Table 3.2-5: Williamson Act Contract Summary

Assessor's Parcel No.	Acres	Expiration Date
021-025-020	10.86	December 31, 2014
021-025-026	19.55	December 31, 2012
Source: GDR Engineering, 2012. County of Stanislaus, 2012.		

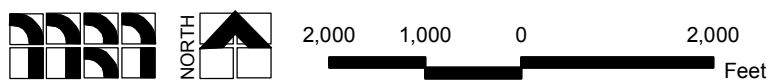
Surrounding Agricultural Land Uses

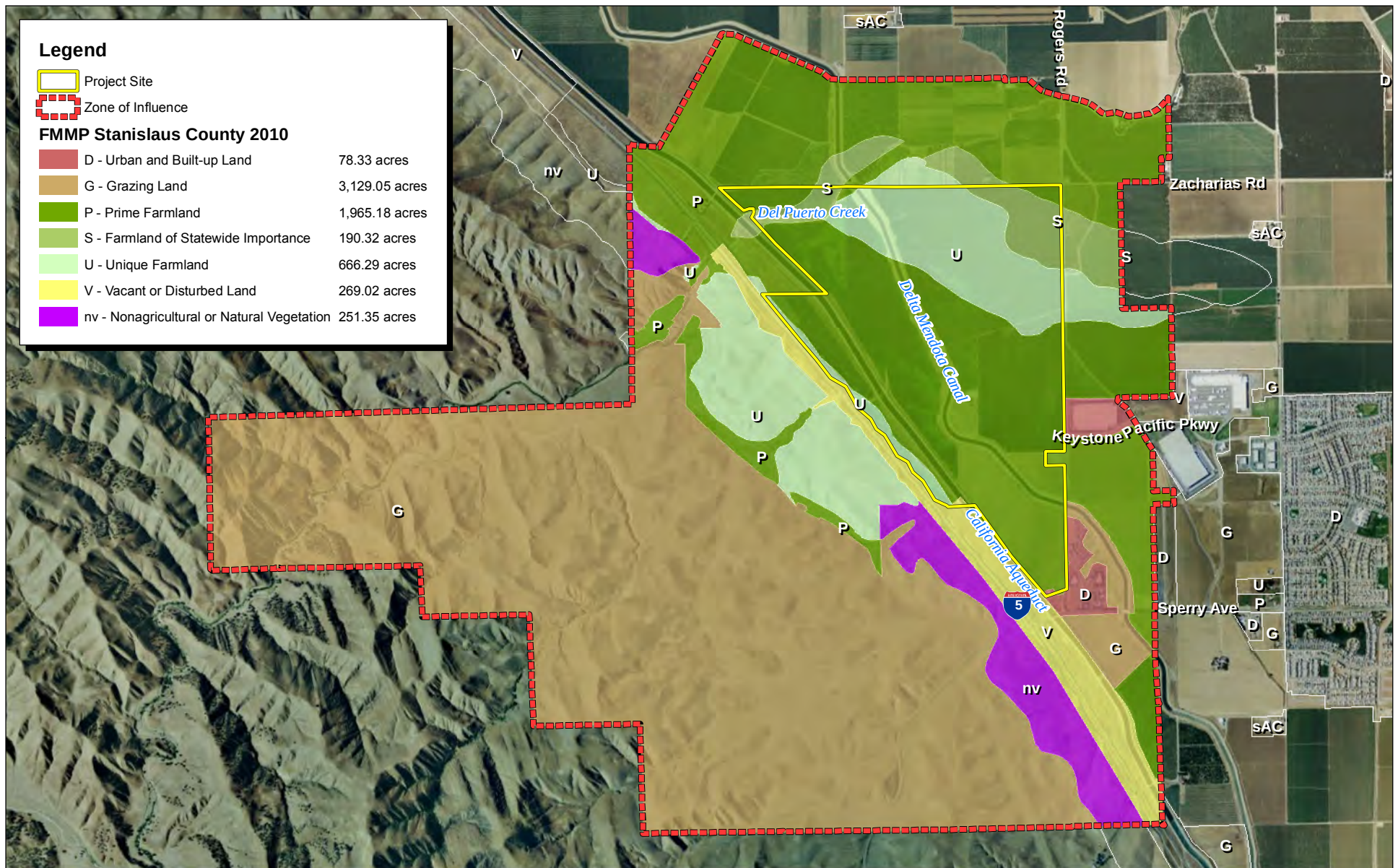
Exhibit 3.2-3 identifies the Zone of Influence around the project site, which totals approximately 6,550 acres. The Zone of Influence encompasses all parcels within 0.25 mile of the project site and is intended to provide context about the surrounding land uses. As shown in Exhibit 3.2-3, Important Farmland is located primarily to the north and east of the project site, with grazing land to the west and south.



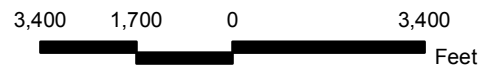


Source: ESRI Aerial Imagery. USDA Soils Data.





Source: ESRI Aerial Imagery. CA Department of Conservation FMMP, 2010.



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Exhibit 3.2-3 Zone of Influence

3.2.2 - Regulatory Framework

State

Farmland Mapping and Monitoring Program (FMMP)

In 1975, the Soil Conservation Service (since renamed Natural Resources Conservation Service [NRCS]) of the United States Department of Agriculture began farmland mapping efforts across the nation, with the goal of producing agricultural resource maps based on soil quality and land use. As part of this nationwide agricultural land use mapping effort, the NRCS developed a series of definitions known as Land Inventory Monitoring criteria. The Land Inventory Monitoring criteria classify the land's suitability for agricultural production; suitability includes both the physical and clinical characteristics of soils and the actual land use. In the early 1980s, to continue these farmland mapping efforts in California, the Farmland Mapping and Monitoring Program (FMMP) was created within the Department of Conservation. The FMMP carries on these mapping activities on a continuing basis and with a greater level of detail; this is accomplished by using a modified Land Inventory Monitoring criteria. These criteria utilize the NRCS and Storie Index Rating Systems, but also consider physical conditions such as a dependable water supply for agricultural production, soil temperature range, depth of the groundwater table, flooding potential, rock fragment content and rooting depth. The FMMP prepares Important Farmlands maps for all counties in California, using the modified Land Inventory Monitoring criteria as well as current land use information.

Williamson Act

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

Upon approval of an application by the Board of Supervisors of the county where the land is located in, the agricultural preserve is established, and the land within the preserve is restricted to agricultural and compatible uses for at least 10 years. Williamson Act contracts are automatically renewed annually for an additional 1-year period, unless the property owner applies for non-renewal or early cancellation. The Williamson Act also contains provisions for cancellation of contracts under certain circumstances.

Local

City of Patterson

General Plan

The City of Patterson General Plan sets forth the following goal and policies relevant to agricultural resources:

- **Goal NR-2:** To protect and preserve local agricultural lands and to prevent their premature conversion to urban uses.
- **Policy NR-2.1:** Agricultural land preservation. Undeveloped lands that are State designated as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland shall be preserved, to the greatest extent feasible, for open space or agricultural use.
- **Policy NR-2.2:** Compact development. The City shall encourage infill development within existing urbanized areas of the city in order to minimize pressure to convert agricultural lands to urban uses. Conversely, the City shall support the continuation of agricultural uses on lands for urban uses until urban development is imminent.
- **Policy NR-2.4:** Support for County agricultural land preservation. The City shall support strategies adopted by Stanislaus County aimed at maintaining agricultural lands in viable farming units in areas not designated for urban development.
- **Policy NR-2.5:** Regional farmland preservation. The City shall continue to work with the County and other jurisdictions to implement conservation plans that preserve prime farmland.
- **Policy NR-2.9:** Williamson Act. The City shall allow cancellation of Williamson Act contracts only if the City Council finds that cancellation is consistent with State law.
- **Policy NR-2.11:** Soil conservation. The City shall encourage soil conservation practices as recommended by the Natural Resources Conservation Service.

County of Stanislaus

General Plan

The Stanislaus County General Plan Agriculture Element sets forth two approaches for avoiding, minimizing, or offsetting impacts on agricultural resources:

- **Farmland Mitigation Program:** This program requires new residential development on lands designated “Agriculture” by the Stanislaus County General Plan in unincorporated Stanislaus County to permanently protect farmland at a 1:1 ratio.
- **Buffers and Setbacks:** New or expanded uses within or adjacent to the A-2 (General Agriculture) zoning district must incorporate a minimum 150-foot-wide buffer setback. Permitted uses within the setback may include public roadways, utilities, drainage facilities, rivers and adjacent riparian areas, landscaping, parking lots, and similar low-people-intensive uses. Permitted uses may also include non-agricultural uses adjoining or surrounding a project site (including but not limited to legal, non-conforming uses and home sites) that are of a permanent nature and are not likely to be returned to agriculture. Landscaping within a buffer setback area shall be designed to exclude turf areas that could induce activities and add to overall maintenance costs and water usage.

Local Agency Formation Commission

Stanislaus Local Agency Formation Commission (LAFCO) oversees jurisdictional boundaries with Stanislaus County. LAFCO’s responsibilities are largely defined by the Cortese-Knox-Hertzberg

Reorganization Act of 2000 and include discretionary review and approval authority for annexations, sphere of influence adjustments, and similar actions. Although LAFCO does not directly regulate agricultural land use activities, the Cortese-Knox-Hertzberg Reorganization Act allows the agency to consider the potential presence of such activities as a factor in the decision-making process.

3.2.3 - Methodology

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

Additionally, Michael Brandman Associates obtained relevant information from the project application regarding the status of the 22 Williamson Act contracts that encumber the parcels comprising the project site. Michael Brandman Associates assessed the proposed cancellation of the contracts against the criteria set forth in Government Code Section 51280 through 51283.

3.2.4 - Thresholds of Significance

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

- a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
- b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?
- c) Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code § 12220(q), timberland (as defined by Public Resources Code § 4526), or timberland zoned Timberland Production (as defined by Government Code § 51104(g))? (Refer to Section 7, Effects Found Not To Be Significant.)
- d) Result in the loss of forest land or conversion of forest land to non-forest use? (Refer to Section 7, Effects Found Not To Be Significant.)
- e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

3.2.5 - Project Impacts and Mitigation Measures

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

Important Farmland

Impact AG-1: The development of the proposed project will result in the conversion of Prime Farmland to non-agricultural use.

Impact Analysis

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

West Patterson Business Park Expansion Project

As shown in Exhibit 3.2-1, the project site is mapped as containing 749.14 acres of Prime Farmland, 278.17 acres of Unique Farmland, and 81.38 acres of Farmland of Statewide Importance, for a total of 1,108.69 acres of Important Farmland¹. The proposed project would convert all of the Important Farmland to non-agricultural use. To assess the significance of this conversion, Michael Brandman Associates prepared a LESA model, and the results are summarized in Table 3.2-6.

Table 3.2-6: Land Evaluation and Site Assessment Model Scoring Summary

Category	Factor	Points	Factor Weigh	Weighted Points	Remarks
Land Evaluation	Land Capability Class	64.1	0.25	16.0	The project site contains mostly Class I, IIe, and IIs soils, which have few agricultural limitations and, therefore, are considered to have high agricultural value.
	Storie Index	47.9	0.25	12.0	The project site has a high Storie Index because of the high agricultural value of the soils.
	Subtotal		0.50	28	—
Site Assessment	Project Size	100.0	0.15	15	The project site size rating is 100 because the high quality soils occupy most of the project site.
	Water Resources Availability	100.0	0.15	15	The project site has access to irrigation water supplied by the Del Puerto Water District. It is assumed that no physical or economic restrictions would limit water availability during drought years.
	Surrounding Agricultural Lands	10.0	0.15	1.5	Farmland accounts for 43 percent of the surrounding land uses, which translates to 10 points.
	Surrounding Protected Resource Lands	10.0	0.05	0.5	It is assumed that all surrounding farmland is classified as “protected.”

¹ As previously noted, areas of the project site designated Prime Farmland, Unique Farmland, and Farmland of Statewide Importance overlap with the California Aqueduct and Delta-Mendota Canal. As such, the actual amount of Important Farmland acreage is substantially less than 1,108.69 acres. Nonetheless, this EIR will use 1,108.69 as the basis for assessing impacts.

Table 3.2-6 (cont.): Land Evaluation and Site Assessment Model Scoring Summary

Category	Factor	Points	Factor Weigh	Weighted Points	Remarks
Subtotal			0.50	32	—
Total				60	—
Note: LESA scoring sheet provided in Appendix B. Source: Michael Brandman Associates, 2012.					

As shown in Table 3.2-3, the project site has a total score of 60. The LESA model indicates that scores between 60 and 79 points are considered significant only if either the Land Evaluation subtotal or the Site Assessment subtotal are less than 20. In this case, both subtotals are greater than 20; therefore, the proposed project would be considered to have a significant impact in terms of converting Important Farmland to non-agricultural use.

The City of Patterson General Plan designates the project site as “General Commercial” and “Light Industrial.” These designations signify that the City has contemplated the conversion of this agricultural land to urban uses over the planning horizon of the General Plan and, therefore, does not view the project area as a preferred location for permanent agricultural uses. The EIR for the City of Patterson General Plan found that conversion of prime agricultural land, including the project site, to urban uses to be a significant and unavoidable impact. As part of adopting the General Plan, the Patterson City Council adopted findings of fact and a statement of overriding consideration that indicated urban development was of greater benefit to the community than preserving agricultural land within city limits. Although conversion of the project area to urban uses would reflect the land use assumptions contained in the City of Patterson General Plan, farmland is an important resource to the region, and direct conversion of Important Farmland to urban land uses would be considered a significant impact under LESA methodology.

The City of Patterson, the County of Stanislaus, and the California Department of Conservation identify preservation of existing Important Farmland acreage as the desired mitigation for the loss of such acreage. Accordingly, Mitigation Measure AG-1 requires the applicant to preserve Important Farmland acreage in Stanislaus County at no less than a 1:1 ratio.

Although Mitigation Measure AG-1 would result in the permanent preservation of farmland, more than 1,000 acres of Important Farmland would be permanently converted to non-agricultural use as a result of project implementation. Mitigation Measure AG-1 does not provide certainty that net new Important Farmland acreage would be created or the productivity of existing non-Important Farmland could be improved such that it could be re-classified as Important Farmland. Therefore, full compensation for the loss of Important Farmland is not feasible. Furthermore, no other feasible mitigation is available to fully offset the loss of Important Farmland. Therefore, the residual significance of this impact would be significant and unavoidable.

Offsite Utility Alignments

Alignment 3 would cross through “Prime Farmland,” while Alignments 1 and 2 would be located within paved or disturbed areas that are not classified as Important Farmland. Thus, only Alignment 3 has the potential to convert Important Farmland to non-agricultural use.

Alignment 3 would total approximately 7,500 lineal feet, with the first 4,000 lineal feet following paved or highly disturbed areas located along Lateral 6 South and the remaining 3,500 lineal feet traversing undeveloped land classified as “Prime Farmland.” As such, the construction of the first 4,000 lineal feet of Alignment 3 would not convert Important Farmland to non-agricultural use. The construction of the remaining 3,500 lineal feet of Alignment 3 would occur within the boundaries of the fully entitled but partially developed West Patterson Business Park. As such, the conversion of this land to non-agricultural use was previously evaluated and disclosed in the West Patterson Projects Environmental Impact Report (State Clearinghouse Nos. 2001022031 and 2001032037). Accordingly, the conversion of Important Farmland associated with Alignment 3 would not represent the disclosure of a new significant impact.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AG-1 Prior to issuance of the grading permit, the project applicant shall preserve Important Farmland acreage, as mapped by the California Department of Conservation Farmland Mapping and Monitoring Program, within Stanislaus County (but outside the Patterson Planning Area) at a ratio of no less than 1:1 for each acre of Important Farmland converted to non-agricultural use by the proposed project. Preserved acreage shall be of equal or higher quality to farmland converted to non-agricultural use. The preservation shall be accomplished through one of the following approaches:

- The applicant shall enter into a binding agreement with one or more private property owners or third-party organizations acceptable to the City of Patterson (e.g., Stanislaus County Farm Bureau or the American Farmland Trust) to permanently preserve farmland. The agreement shall identify an irrevocable instrument that will be recorded against the preserved acreage property. This option shall be pursued if the City of Patterson does not have a farmland preservation program in place at the time permits are sought.
- If the City of Patterson establishes a farmland preservation program before the project applies for construction permits for any phase of development, the City may require the applicant to pay fees to the City of Patterson equivalent to the cost of preserving Important Farmland. The City shall use the fees to fund an irrevocable instrument (e.g., deed restriction or preservation easements) to permanently preserve farmland.

Level of Significance After Mitigation

Significant unavoidable impact.

Conflicts with Existing Zoning or Williamson Act Contract

Impact AG-2:	The proposed project would not conflict with agricultural zoning, but it may conflict with the provisions of an active Williamson Act contract.

Impact Analysis

This impact will address potential conflicts with agricultural zoning or Williamson Act contracts. Each issue is discussed separately.

West Patterson Business Park Expansion Project

Agricultural Zoning

The parcels comprising the project site are currently located in unincorporated Stanislaus County and zoned “General Agriculture – 40 Acre Minimum (A-2-40),” which is an agricultural zoning designation.

The project applicant is seeking to annex the project site into the Patterson city limits. As part of the annexation process, the City is proposing to pre-zone the parcels “General Commercial,” “West Patterson Industrial Business Park,” or “West Patterson Light Industrial,” all of which are non-agricultural zoning designations. This pre-zoning is a discretionary approval that is necessary for approval of the project and, therefore, is considered a “self-mitigating” aspect of the proposed project. As such, with the approval of the pre-zoning, no conflicts with agricultural zoning would occur.

Note that agricultural activities would be permitted to continue on the parcels comprising the project site during the interim period between annexation and construction. Such activities would be considered “legal, conforming land use activities,” since they pre-date annexation and, therefore, would be exempt from compliance with the City zoning requirements.

Williamson Act Contracts

As previously shown in Table 3.2-5, two parcels within the project site boundaries are encumbered by active Williamson Act contracts. The two contracts (Assessor’s Parcel Nos. 021-025-026 and 021-025-020) expire on December 31, 2012 and December 31, 2014, respectively; thus, cancellation prior to expiration is a possibility for one or both contracts.

Government Code Sections 51280 through 51283 set forth procedures for cancelling a Williamson Act contract. The property owner must pay a cancellation fee and the lead agency must make findings justifying the cancellation. Table 3.2-7 summarizes the Williamson Act contract cancellation findings and provides a consistency analysis of whether or not the proposed project would meet the findings.

Table 3.2-7: Williamson Act Contract Cancellation Findings

Required Finding	Determination
That the cancellation is for land on which a notice of nonrenewal has been served pursuant to Section 51245.	Consistent: Notices of Non-Renewal were filed for the two contracts that expire on December 31, 2012 and December 31, 2014, respectively.
That cancellation is not likely to result in the removal of adjacent lands from agricultural use.	Consistent: Cultivated agricultural land exists west and north of the project site. At the time of this writing, there are no applications on file with the City of Patterson to develop non-agricultural uses on these properties. Although both areas are within the City of Patterson General Plan Planning Area, the General Plan establishes that urban growth must be contiguous to developed areas. Thus, these areas would not be expected to be developed until the proposed project is built out, which expected to take 20 years. As such, the cancellation is not likely to result in the removal of adjacent lands from agricultural use in the foreseeable future.
That cancellation is for an alternative use, which is consistent with the applicable provisions of the city or county general plan.	Consistent: The City of Patterson General Plan contemplates the project site be developed for General Commercial and Light Industrial use. The proposed project is proposing to develop commercial and industrial uses consistent with these land use designations.
That cancellation will not result in discontinuous patterns of urban development.	Consistent: The project site is adjacent to the existing West Patterson Business Park and Villa del Lago highway commercial center, which contain urban development. Furthermore, the proposed project would be phased over a 20-year period, which would allow for the logical and orderly development of the project, thereby allowing agricultural activities to continue as an interim land use until economic conditions warrant new development. This is consistent with the objective of promoting contiguous patterns of urban development.
That there is no proximate noncontracted land which is both available and suitable for the use to which it is proposed the contracted land be put, or, that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.*	Consistent: As of January 1, 2012, 24 of the 26 parcels that comprise the project site (97 percent of the acreage) were not encumbered by active Williamson Act contracts. Thus, the vast majority of the project site would be considered “noncontracted land.” The two parcels that are encumbered by active Williamson Act contracts are located in the center of the project site and, therefore, cannot be excluded from the proposed project without creating awkward and illogical project boundaries. Furthermore, the project site possesses attributes that no other proximate, noncontracted land does, including (1) its close proximity to existing and planned I-5 interchanges, as well as the planned South County Expressway; (2) being located within the Patterson Planning Area and designated for General Commercial and Light Industrial use by the City of Patterson General Plan; and (3) being contiguous to the existing West Patterson Business Park and Villa del Lago highway commercial center.

Table 3.2-7 (cont.): Williamson Act Contract Cancellation Findings

Required Finding	Determination
Cancellation is in the public interest based on the following findings: (1) Other public concerns substantially outweigh the objectives of this chapter; and (2) That there is no proximate noncontracted land which is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.	Consistent: The proposed project would accrue substantial economic benefits to the City of Patterson, including new capital investment, employment opportunities, tax revenue, and commercial opportunities. The project would facilitate the attraction of new commercial and industrial uses that are very limited in Patterson and western Stanislaus County. Finally, the project would further the objectives of the General Plan by developing land to its highest-and-best use and facilitating the orderly and logical expansion of the Patterson city limits. All of these reasons demonstrate that cancellation of the Williamson Act contracts are in the public interest. See previous discussion about proximate, noncontracted land.
Note: * Government Code Section 15182(a) defines “proximate, noncontracted land” as land not restricted by contract, which is sufficiently close to land that is so restricted it can serve as a practical alternative for the use that is proposed for the restricted land. Source: Michael Brandman Associates, 2012.	

As shown in Table 3.2-7, the proposed cancelation would be consistent with all required findings. As such, should the final map be recorded prior to expiration of one or both of the Williamson Act contracts, the project applicant would only be required to pay the cancellation fee, which is reflected in Mitigation Measure AG-2. With the implementation of mitigation, impacts would be less than significant.

Offsite Utility Alignments

Alignment 3 would cross through areas designated as “Prime Farmland,” while Alignments 1 and 2 would be located within paved or disturbed areas. Thus, only Alignment 3 has the potential to conflict with agricultural zoning or Williamson Act contracts.

The northern portion of Alignment 3 is located in unincorporated Stanislaus County and is zoned “General Agriculture – 40 Acre Minimum (A-2-40),” which is an agricultural zoning designation. Underground utilities are permitted in all County zoning designations; therefore, no conflicts with agricultural zoning would occur.

The southern portion of the alignment is located within the City of Patterson and is zoned “West Patterson Light Industrial,” which is a non-agricultural zoning designation. This condition precludes the possibility of conflicts with agricultural zoning.

None of the properties traversed by Alignment 3 are encumbered by active Williamson Act contracts. This condition precludes the possibility of conflicts with Williamson Act contracts.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AG-2 In the event that the Williamson Act contracts that encumber Assessor's Parcel Nos. 021-025-020 or 021-025-026 have not expired at the time of recordation of the first final map, the project applicant shall pay the Williamson Act contract cancellation fee as determined by the Stanislaus County Assessor's Office. This mitigation measure does not apply if both Williamson Act contracts have expired prior to recordation of the final map.

Level of Significance After Mitigation

Less than significant impact.

Pressures to Convert Farmland to Non-Agricultural Use

Impact AG-3: The proposed project may create other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use.

Impact Analysis

This impact will evaluate the potential for the proposed project to create pressures on surrounding agricultural lands, which result in their ultimate conversion to non-agricultural use. In evaluating whether the proposed project would create pressures to convert farmland to non-agricultural use, this impact analysis will focus on whether the proposed project would (1) be in conflict with the long-term vision of the City of Patterson General Plan in the context of preservation of agricultural resources and (2) whether it would serve as a catalyst for premature conversion of agricultural land to non-agricultural use.

West Patterson Business Park Expansion Project

As shown in Exhibit 3.2-3, large swaths of farmland exist north and east of the project site and small areas of farmland exist to the west and south. All of the lands immediately adjacent to the project site are within the Patterson General Plan Planning Area or are currently within the Patterson city limits, signifying that they would be converted to urban use at some point in the future. Thus, to the extent that these areas ultimately convert to urban uses, it would be in accordance with the long-term vision of the General Plan and not solely a consequence of the proposed project.

Furthermore, the General Plan sets forth Policy NR-2.1 and Policy NR-2.2, which call for developing areas contiguous to existing urban development in order to discourage premature conversion of farmland to non-agricultural use. Thus, it would be expected that the farmland areas west and north of the project site would not convert to urban use until after the proposed project is built out, which is expected to take 20 to 30 years. As such, the proposed project would not be expected to result in the premature conversion of this acreage to non-agricultural use.

The farmland east and south of the project site is contiguous to existing urban development, and some of this acreage is currently entitled for urban development (e.g., the farmland within the existing West Patterson Business Park boundaries); therefore, its conversion would be neither premature nor in conflict with the General Plan's policies.

Finally, Stanislaus County's buffer and setback requirements would apply only to the properties north of Zacharias Road and west of Rogers Road (and north of the Grainger warehouse), because these are the only adjoining properties zoned General Agriculture (A-2). As previously discussed in Section 2, Project Description, Zacharias Road would have a 65-foot-wide section and Rogers Road would have a 100-foot-wide section. The proposed Master Development Plan also requires that all buildings and parking lots must be set back a minimum of 20 feet from the property line or right-of-way plan line, whichever is greater. As such, development along Zacharias Road would be set back a minimum of 85 feet from agricultural uses, and development along Rogers Road would be set back a minimum of 120 feet. The County's buffer and setback requirements require a minimum of 150 feet. As such, Mitigation Measure AG-3 requires that final maps adjoining lands in unincorporated Stanislaus County show a minimum 150-foot setback. With the implementation of this mitigation measure, impacts would be less than significant.

Offsite Utility Alignments

Alignment 3 would cross through areas designated as "Prime Farmland," while Alignments 1 and 2 would be located within paved or disturbed areas. Thus, only Alignment 3 has the potential to create pressures on surrounding agricultural lands to convert to non-agricultural use.

Alignment 3 would total approximately 7,500 lineal feet, with the first 4,000 lineal feet following paved or highly disturbed areas (non-Important Farmland) located along Lateral 6 South and the remaining 3,500 lineal feet traversing undeveloped land classified as "Prime Farmland." As such, the construction of the first 4,000 lineal feet of Alignment 3 would not create pressures to convert adjacent farmland to non-agricultural use. The construction of the remaining 3,500 lineal feet of Alignment 3 would occur within the boundaries of the fully entitled but partially developed West Patterson Business Park. As such, the conversion of this land to non-agricultural use was previously evaluated and disclosed in the West Patterson Projects Environmental Impact Report (State Clearinghouse Nos. 2001022031 and 2001032037). Accordingly, the development of Alignment 3 would not result in the disclosure of a new significant impact.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AG-3 Prior to recordation of the final maps that adjoin lands in unincorporated Stanislaus County, the project applicant shall prepare and submit plans to the City of Patterson demonstrating that 150-foot minimum setbacks have been established between the

proposed project and all agricultural lands in unincorporated Stanislaus County zoned General Agriculture (A-2). Pursuant to the County's policy, permitted uses within the setback may include public roadways, utilities, drainage facilities, rivers and adjacent riparian areas, landscaping, parking lots, and similar low-people-intensive uses. Permitted uses may also include non-agricultural uses adjoining or surrounding a project site (including but not limited to legal, non-conforming uses and home sites) that are of a permanent nature and are not likely to be returned to agriculture. Landscaping within a buffer setback area shall be designed to exclude turf areas that could induce activities and add to overall maintenance costs and water usage.

Level of Significance After Mitigation

Less than significant impact.

3.3 - Air Quality and Greenhouse Gas Emissions

3.3.1 - Introduction

This section describes the existing air quality setting and potential effects from project implementation on the site and its surrounding area. Michael Brandman Associates performed air quality analysis for the proposed project, which included construction and operational air quality modeling, a Health Risk Assessment, and greenhouse gas emissions modeling. URBEMIS 2007 Version 9.2 was used to quantify project construction and operational emissions. The air quality analysis, including model output, is provided in Appendix C.

3.3.2 - Environmental Setting

The project is located in the Stanislaus County, which is located in the San Joaquin Valley Air Basin (Air Basin). Regional and local air quality is impacted by topography, dominant airflows, atmospheric inversions, location, and season.

San Joaquin Valley Air Basin

The information in this section is primarily from the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) and the accompanying Technical Document.

The Air Basin has an “inland Mediterranean” climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the Air Basin averages over 260 sunny days per year. At the Modesto meteorological station, the closest meteorological station located approximately 14 miles northeast of the project, the maximum daily average temperatures (approximately 94.3 degrees Fahrenheit [°F]) occur in July. The range of daily temperature in the summer can vary as much as 30°F. The lowest average high temperatures (approximately 37.7°F) occur in January.

The majority of rainfall in the Air Basin occurs between November and April. Since 1906, precipitation at the Modesto weather station averaged 12.25 inches per year, with 88 percent of the precipitation occurring between November and April.

Topography

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

Dominant Airflow

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

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

Inversions

Generally, the temperature of air decreases with height, creating a gradient from warmer air near the ground to cooler air at elevation. This gradient of cooler air over warm air is known as the environmental lapse rate. Inversions occur when warm air sits over cooler air, trapping the cooler air near the ground. These inversions trap pollutants from dispersing vertically and the mountains surrounding the San Joaquin Valley trap the pollutants from dispersing horizontally. Strong temperature inversions occur throughout the Air Basin in the summer, fall, and winter. Daytime temperature inversions occur at elevations of 2,000 to 2,500 feet above the San Joaquin Valley floor during the summer and at 500 to 1,000 feet during the winter.

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

Location and Season

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

Regional Air Quality

The Air Basin is designated as “nonattainment” for the federal ozone and PM_{2.5} standards, and “nonattainment” for the state ozone, PM₁₀, and PM_{2.5} standards, as discussed in the Regulatory Framework section. A description of the air pollutants and related health effects is also contained in the Regulatory Framework section.

Stanislaus County Emissions Inventory

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

Mobile sources include on-road sources and off-road mobile sources. The on-road emissions inventory, which includes automobiles, motorcycles, and trucks, is an estimate of population, activity, and emissions of the on-road motor vehicles used in California. The off-road emissions inventory is an estimate of the population, activity, and emissions of various off-road equipment, including recreational vehicles, farm and construction equipment, lawn and garden equipment, forklifts, locomotives, and commercial marine and marine pleasure craft.

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

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

Natural, or non-anthropogenic, sources include source categories with naturally occurring emissions such as wildfires and biogenic emissions from plants.

Table 3.3-1 summarizes Stanislaus County's estimated 2008 emissions inventory for major categories of air pollutants presented in tons per day. According to the 2008 data (the most recent year available) for Stanislaus County, approximately 40 percent of ROG emissions came from areawide sources, with the farming operations as the major contributing areawide source, followed by consumer products, architectural coatings, and pesticides/fertilizers. Approximately 28 percent of ROG emissions came from mobile sources, and 24 percent of the ROG emissions from natural sources.

For the CO inventory, mobile sources accounted for almost 75 percent of emissions. The 2008 NO_x inventory is similarly dominated by mobile sources (approximately 87 percent).

Areawide sources generated the majority of PM₁₀ and PM_{2.5} emissions in Stanislaus County. The PM₁₀ inventory is dominated by areawide sources with 80 percent of the inventory generated by miscellaneous areawide sources. Within areawide sources, the main contributors of PM₁₀ were farming operations and paved road dust, constituting 32 and 15 percent of the County's total PM₁₀ inventory, respectively.

The inventory for PM_{2.5} is also concentrated in areawide sources, which contributed approximately 60 percent of the total inventory, with mobile sources contributing 15 percent of the inventory, and stationary sources accounting for 12 percent of the inventory. The main areawide source in the

County's PM_{2.5} inventory was farming operations, followed by managed wood burning and disposal, paved road dust and fugitive windblown dust.

Table 3.3-1: Stanislaus County 2008 Emissions Inventory

Source	Pollutant (tons per day)				
	ROG	CO	NO _x	PM ₁₀	PM _{2.5}
Stationary Sources	5.0	2.0	4.1	2.5	1.4
Areawide Sources	21.9	20.7	1.6	24.6	6.8
Mobile Sources	15.3	110.5	41.9	2.1	1.7
Natural (Non-anthropogenic)	13.1	15.7	0.5	1.6	1.4
Total	55.4	148.9	48.2	30.8	11.3
Source: California Air Resources Board, 2011.					

Local Air Quality

The SJVAPCD operates monitoring stations throughout the Air Basin. Existing local air quality, historical trends, and projections of air quality are best evaluated by reviewing relevant air pollutant concentrations from near the project area. The California Air Resources Board (ARB) and SJVAPCD operate two air monitoring stations in San Joaquin County 14.5 miles to the northeast. Table 3.3-2 summarizes 2008 through 2010 published monitoring data from ARB's Aerometric Data Analysis and Management System for the Modesto Station.

As shown in Table 3.3-2, ambient air pollution concentrations in the Project area regularly exceeded the state 1-hour ozone standard and the federal 8-hour standard in the last 3 years. In the same timeframe, the area exceeded the state daily PM₁₀ standard and the federal PM_{2.5} standard. However, the area did not exceed the federal or state CO standards, nor did the area exceed the federal PM₁₀ standard.

Table 3.3-2: Air Quality Monitoring Summary

Pollutant	Averaging Time (Units)	2007	2008	2009
Ozone	Maximum 1 Hour (ppm)	0.127	0.112	0.105
	Days > State Standard (0.09 ppm)	10	1	1
	Maximum 8 Hour (ppm) ¹	0.107	0.098	0.081
	Days > 2008 Federal Standard (0.075 ppm) Days > State Standard (0.07 ppm)	18 24	7 14	3 9
Carbon monoxide (CO)	Maximum 1 Hour (ppm) ²	2.77	3.44	2.54
	Maximum 8 Hour (ppm)	1.94	2.41	1.78
	Days > State Standard (9.0 ppm) Days > Federal Standard (9 ppm)	0 0	0 0	0 0
	State Annual Average	0.012	0.012	0.010

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

Pollutant	Averaging Time (Units)	2007	2008	2009
Nitrogen dioxide (NO ₂)	Maximum 1-Hour (ppm)	0.063	0.058	0.050
	Days > State Standard (0.18 ppm)	0	0	0
	3-year Average 98 th Percentile of 1-Hour Average	—	—	0.049
	Exceeds Federal 98 th Percentile Standard (0.10 ppm)			No
Course particulate matter (PM ₁₀)	State Annual Average (20 µg/m ³)	ID	26.6	22.1
	Maximum 24 Hour (µg/m ³) ¹	111.1	65.6	57.7
	Est. Days > Federal Standard (150 µg/m ³)	0.0	0.0	0.0
	Est. Days > State Standard (50 µg/m ³)	ID	36.4	6.1
Fine particulate matter (PM _{2.5})	State Annual Average (µg/m ³)	16.0	13.0	ID
	Maximum 24 Hour (µg/m ³)	88.3	59.3	53.2
	Est. Days > Federal Standard (35 µg/m ³)	39.4	24.7	14.5
Notes: > = exceed ppm = parts per million ID = insufficient data Exceedances are listed in bold. ¹ From the California measurement. ² The ARB does not report 1-hour average CO concentrations in its database, only 8-hour CO concentrations. Therefore, the 1-hour CO concentration was derived by dividing the 8-hour concentration by 0.7. Data is from the Stockton-Hazleton Street Station except for sulfur dioxide, which is from the Fresno station. Source: California Air Resources Board, 2011.				

Local Sources of Air Pollution

Nearby sources of air pollution include the following:

- Interstate 5 immediately adjacent to the western boundary of the project
- Villa del Lago highway commercial center along the eastern boundary of the project site, which generates emissions from passenger vehicles and trucks.
- The existing West Patterson Business Park immediately east of the project boundary, which generates emissions from passenger vehicles and trucks.
- Agricultural fields and associated uses north, east and south the project boundary, which may have emissions of fugitive dust.
- Patterson Airport approximately 0.5 mile east of the project site.
- Various residences, which have minimal emissions from vehicles, natural gas, and ROG.

Sensitive Receptors

Those who are sensitive to air pollution include children, the elderly, and persons with pre-existing respiratory or cardiovascular illness. For purposes of CEQA, the SJVAPCD considers a sensitive

receptor to be a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools. The nearest sensitive receptor to the project site area is the residence located approximately 105 feet (32 meters) to the north of the project boundary, across Zacharias Road. Additional rural residences are located within 1 mile of the project site. No schools are located within 1 mile of the project boundary. A recreational vehicle park is located on the opposite side of Rogers Road from the project site.

Greenhouse Gases

Unlike criteria and toxic air pollutants, which are of regional and local concern, greenhouse gases are global pollutants. Greenhouse gases trap heat in the atmosphere. The effect is analogous to the way a greenhouse retains heat. Common greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities also emit greenhouse gas. 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.

Individual greenhouse gas compounds have varying global warming potential and atmospheric lifetimes. Carbon dioxide, the reference gas for global warming potential, has a global warming potential of one. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing greenhouse gas emissions since it normalizes various greenhouse gas emissions to a consistent metric. Methane's warming potential of 21 indicates that methane has a 21 times greater warming affect than carbon dioxide on a molecule per molecule basis. A carbon dioxide equivalent is the mass emissions of an individual greenhouse gas multiplied by its global warming potential.

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

Table 3.3-3: Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Methane (CH ₄)	Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 21.	Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, decay of organic matter, and cattle.
Nitrous oxide (N ₂ O)	Nitrous oxide is also known as laughing gas and is a colorless greenhouse gas. It has a lifetime of 114 years. Its global warming potential is 310.	Microbial processes in soil and water, fuel combustion, and industrial processes.
Carbon dioxide (CO ₂)	Carbon dioxide is an odorless, colorless, natural greenhouse gas. Carbon dioxide's global warming potential is 1.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing.

Table 3.3-3 (cont.): Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Carbon dioxide (CO ₂) (cont.)	The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960.	Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Hydro-fluorocarbons	Hydrofluorocarbons are a group of greenhouse gases containing carbon, chlorine, and at least one hydrogen atom. Global warming potentials range from 140 to 11,700.	Hydrofluorocarbons are synthetic manmade chemicals used as a substitute for chlorofluorocarbons in applications such as automobile air conditioners and refrigerants.
Source: Michael Brandman Associates, 2011.		

Greenhouse Gas Emissions Inventory and Trends

Emissions worldwide were approximately 49,000 million metric tons of carbon dioxide equivalents (MMTCO₂e) in 2004. In 2004, greenhouse gas emissions in the United States were 7,074.4 million MTCO₂e. California is the second largest contributor of greenhouse gases in the U.S. and, if treated as its own nation, the sixteenth largest in the world.

According to the ARB's recent greenhouse gas inventory for the State, the single largest source of greenhouse gases in California is transportation, contributing 37 percent of the State's total greenhouse gas emissions in 2008. Electricity generation (both in and out of state) is the second largest source, contributing 25 percent of the State's greenhouse gas emissions. The inventory for California's greenhouse gas emissions between 2000 and 2008, by even years, is presented in Table 3.3-4.

Table 3.3-4: California Greenhouse Gas Inventory 2000–2008

Main Sector ¹	Emissions MMTCO ₂ e				
	2000	2002	2004	2006	2008
Agriculture & Forestry	25.63	28.61	29.01	30.08	28.25
Commercial	12.80	14.44	13.20	13.01	14.69
Electricity Generation (Imports)	44.31	56.00	62.92	51.68	61.58
Electricity Generation (In state)	60.76	51.57	58.09	56.99	55.74
Industrial	104.56	103.57	97.76	97.80	100.03
Not Specified	8.72	10.26	11.85	13.18	14.02
Residential	30.13	29.35	29.34	28.46	28.45
Transportation	171.13	180.36	181.71	184.11	174.99
Total	458.03	474.15	483.88	475.31	477.74
Notes: MMTCO ₂ e = million metric tons of carbon dioxide equivalent ¹ Excludes military sector, aviation, and international marine bunker fuel. Source: California Air Resources Board, 2010.					

Potential Environmental Effects

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

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

- **A reduction in the quality and supply of water from the Sierra snowpack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.
- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30 percent toward the end of the 21st century because more winter rain will stimulate the growth of more plant “fuel” available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- **Reductions in the quality and quantity of certain agricultural products.** The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.
- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today’s conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California’s coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations

of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

- **An increase temperature and extreme weather events.** Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- **A decrease in the health and productivity of California's forests.** Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.

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

3.3.3 - Criteria, Localized and Regional Air Pollutant Regulatory Framework

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

U.S. Environmental Protection Agency

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

• Ozone	• Carbon monoxide (CO)
• Particulate matter (PM ₁₀ and PM _{2.5})	• Lead
• Nitrogen dioxide	• Sulfur dioxide

The national standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants. Primary national standards are the levels of air quality necessary, with an adequate margin of safety, to protect public health.

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain national standards. The State Implementation Plan incorporates individual federal attainment plans for regional air districts. The State Implementation Plan for the State of California is administered by the ARB, as described below.

California Air Resources Board

The State Implementation Plan for the State of California is administered by ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. Federal attainment plans prepared by each air district are sent to ARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring) control measures and strategies and enforcement mechanisms.

The ARB also administers California Ambient Air Quality Standards for the 10 air pollutants designated in the California Clean Air Act. The 10 state air pollutants are the six national standards listed above as well as the following: visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The national and state ambient air quality standards, the most relevant effects, the properties, and sources of the pollutants are summarized in Table 3.3-5.

Table 3.3-5: Air Pollutants

Air Pollutant	Averaging Time	California Standard	National Standard ^a	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Ozone	1 Hour	0.09 ppm	—	(a) Decrease of pulmonary function and localized lung edema in humans and animals, (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals, (c) increased mortality risk, (d) risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans, (e) vegetation damage, (f) property damage.	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between reactive organic gases, NO _x , and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (ROG and NO _x) are mobile sources (on-road and off-road vehicle exhaust).
	8 Hour	0.070 ppm	0.075 ppm			
Carbon Monoxide (CO)	1 Hour	20 ppm	35 ppm	(a) Aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease, (b) decreased exercise tolerance in persons with peripheral vascular disease and lung disease, (c) impairment of central nervous system functions, (d) possible increased risk to fetuses.	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.
	8 Hour	9.0 ppm	9 ppm			
Nitrogen Dioxide ^c (NO ₂)	1 Hour	0.18 ppm	0.100 ppm	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups, (b) risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes, (c) contribution to atmospheric discoloration.	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides - NO _x (NO, NO ₂ , NO ₃ , N ₂ O, N ₂ O ₃ , N ₂ O ₄ , and N ₂ O ₅). NO _x is a precursor to ozone, PM ₁₀ , and PM _{2.5} formation. NO _x can react with compounds to form nitric acid and related particles.	NO _x is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. NO ₂ concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.
	Annual	0.030 ppm	0.053 ppm			

Table 3.3-5 (cont.): Air Pollutants

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

Table 3.3-5 (cont.): Air Pollutants

Air Pollutant	Averaging Time	California Standard	National Standard ^a	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfates	24 Hour	25 µg/m ³	—	(a) Decrease in ventilatory function, (b) aggravation of asthmatic symptoms, (c) aggravation of cardio-pulmonary disease, (d) vegetation damage, (e) degradation of visibility, (f) property damage.	The sulfate ion is a polyatomic anion with the empirical formula SO ₄ ²⁻ . Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.
Lead ^b	30-day	1.5 µg/m ³	—	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction. The more serious effects of lead poisoning include behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs. Lead may also contribute to high blood pressure and heart disease.	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. An aerosol is a collection of solid, liquid, or mixed-phase particles suspended in the air. Lead was first regulated as an air pollutant in 1976. Lead gasoline was first marketed in 1923 and was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or national air quality standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering. Lead can be removed from the atmosphere through deposition to soils, ice caps, oceans, and inhalation.
	Quarter	—	1.5 µg/m ³			
	Rolling 3-month average	—	0.15 µg/m ³			
Vinyl Chloride ^b	24 Hour	0.01 ppm	—	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.

Table 3.3-5 (cont.): Air Pollutants

Air Pollutant	Averaging Time	California Standard	National Standard ^a	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Hydrogen Sulfide	1 Hour	0.03 ppm	—	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.	Hydrogen sulfide (H ₂ S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur containing fuels (oil and coal).
Reactive Organic Gases (ROGs)		There are no state or national ambient air quality standards for ROGs because they are not classified as criteria pollutants.		Health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of ROGs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many ROGs have been classified as toxic air contaminants.	ROGs, or volatile organic compounds (VOCs), are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably.	Indoor sources of ROGs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of ROGs are from combustion and fuel evaporation. A reduction in ROG emissions reduces certain chemical reactions that contribute to the formulation of ozone. ROGs are transformed into organic aerosols in the atmosphere, which contribute to higher PM ₁₀ and lower visibility.
Benzene		There are no ambient air quality standards for benzene.		Short-term (acute) exposure of high doses from inhalation of benzene may cause dizziness, drowsiness, headaches, eye irritation, skin irritation, and respiratory tract irritation, and at higher levels, loss of consciousness can occur. Long-term (chronic) occupational exposure of high doses has caused blood disorders, leukemia, and lymphatic cancer.	Benzene is a ROG. It is a clear or colorless light-yellow, volatile, highly flammable liquid with a gasoline-like odor. The EPA has classified benzene as a “Group A” carcinogen.	Benzene is emitted into the air from fuel evaporation, motor vehicle exhaust, tobacco smoke, and from burning oil and coal. Benzene is used as a solvent for paints, inks, oils, waxes, plastic, and rubber. It is used in the extraction of oils from seeds and nuts and in the manufacture of detergents, explosives, and pharmaceuticals.

Table 3.3-5 (cont.): Air Pollutants

Air Pollutant	Averaging Time	California Standard	National Standard ^a	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Diesel Particulate Matter (DPM)		There are no ambient air quality standards for DPM.		Some short-term (acute) effects of diesel exhaust exposure include eye, nose, throat, and lung irritation, and can cause coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.	DPM is a source of PM _{2.5} —diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. In 2002 in the South Coast Air Basin, the main sources of diesel particulate matter were due to the combustion of diesel fuel in diesel-powered engines. Such engines can include on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.
Abbreviations: ppm = parts per million (concentration) µg/m³ = micrograms per cubic meter Annual = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter a) National standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 Hour SO₂, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. b) The ARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants. c) Effective April 12, 2010, to attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb, or 188 µg/m³ d) To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb. Source of effects: South Coast Air Quality Management District, 2007; California Environmental Protection Agency, 2002; California Air Resources Board, 2009; United States Environmental Protection Agency, 2007; United States Environmental Protection Agency, 2000; National Toxicology Program, 2005. Source of standards: California Air Resources Board, 2011. Source of properties and sources: United States Environmental Protection Agency, 1999; United States Environmental Protection Agency, 2003; Environmental Protection Agency, 2009; National Toxicology Program, 2005.						

Toxic Air Contaminant Regulation

The California legislature enacted the Toxic Air Contaminant Identification and Control Act (AB 1807; Tanner 1983) governing the release of toxic air contaminants into the air. This law charges ARB with the responsibility for identifying substances as toxic air contaminants, setting priorities for control, adopting control strategies, and promoting alternative processes. The ARB has designated almost 200 compounds as toxic air contaminants. AB 2588, the Air Toxics “Hot Spots” Program, was enacted in 1987, and requires stationary sources to report the types and quantities of certain substances routinely released into the air. The goals of the Air Toxics “Hot Spots” Act are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels. ARB also prepares the California Toxics Inventory, and provides Risk Management Guidelines for new and modified sources of toxic air contaminants. Additionally, the ARB has implemented control strategies, called Airborne Toxic Control Measures (ATCM), for a number of compounds that pose high health risk and show potential for effective control, including diesel particulate matter and asbestos. Diesel particulate matter is discussed in Table 3.3-5.

Asbestos

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

Construction sometimes involves the demolition of existing buildings that contain asbestos-containing materials. Additionally, asbestos is found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentine) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

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

The ARB has an Air Toxics Control Measure for construction, grading, quarrying, and surface mining operations requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading

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

According to the Department of Conservation's General Location Guide for Ultramafic Rocks in California, the nearest area likely to contain naturally occurring asbestos is approximately 6.5 miles west of the project boundary.

ARB's Land Use Handbook

ARB adopted the Air Quality and Land Use Handbook: A Community Health Perspective (Land Use Handbook) in 2005. The Land Use Handbook provides information and guidance on siting sensitive receptors in relation to sources of toxic air contaminants. The sources of toxic air contaminants identified in the Land Use Handbook are high-traffic freeways and roads, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and large gasoline dispensing facilities. If the project involves siting a sensitive receptor or source of toxic air contaminants discussed in the Land Use Handbook, siting mitigation may be added to avoid potential land use conflicts, thereby reducing the potential for health impacts to the sensitive receptors.

The Project does not propose new sensitive receptors near existing sources of toxic air contaminants. However, it may allow development sources of air pollution discussed in the Land Use Handbook, specifically, distribution centers. The Land Use Handbook's recommendations are based on siting new sensitive receptors, and are only guidelines. They are not designed to substitute for more specific information if it exists. The recommendations for distribution centers are:

- Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where operations exceed 300 hours per week.
- Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.

San Joaquin Valley Air Pollution Control District

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

Attainment Status

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

Areas are designated attainment or nonattainment on a per-pollutant basis. If an air basin exceeds the form of a federal or state standard, the air basin is designated as “nonattainment” for that air pollutant. An air basin is designated as “attainment” for pollutant if all the standards for that pollutant are met. If there is inadequate or inconclusive data to make a definitive attainment designation for a pollutant, the air basin is considered “unclassified.” The current attainment designations for the Air Basin are shown in Table 3.3-6.

Table 3.3-6: Air Basin Attainment Status

Pollutant	Designation	
	Federal	State
Ozone –1-hour	No Federal Standard	Nonattainment/Severe
Ozone – 8-hour	Nonattainment/Extreme ¹	Nonattainment
PM ₁₀	Attainment	Nonattainment
PM _{2.5}	Nonattainment	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment
Note: ¹ Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010). Source: San Joaquin Valley Air Pollution Control District, 2011.		

Current Air Quality Plans

Ozone Plans

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

The Air Basin is classified as serious nonattainment for the federal 8-hour ozone standard. On April 30, 2007, the SJVAPCD's Governing Board adopted the 2007 Ozone Plan, which contained analysis showing a 2013 attainment target to be unfeasible. The 2007 Ozone Plan calls for a 75-percent reduction in NO_x emissions and a 25-percent reduction in ROG emissions by the year 2023. ARB approved the plan in June 2007. On April 15, 2010, the EPA signed a final rule to grant requests from the State of California to reclassify 8-hour ozone nonattainment areas in San Joaquin Valley from "serious" to "extreme."

State ozone standards do not have an attainment deadline but require implementation of all feasible measures to achieve attainment at the earliest date possible.

Particulate Matter Plans

The Air Basin was designated nonattainment of state and federal health-based air quality standards for PM₁₀. To meet Clean Air Act requirements for the PM₁₀ standard, the SJVAPCD adopted a PM₁₀ Attainment Demonstration Plan (Amended 2003 PM₁₀ Plan and 2006 PM₁₀ Plan), which has an attainment date of 2010.

The SJVAPCD subsequently adopted the 2007 PM₁₀ Maintenance Plan and Request for Redesignation (2007 PM₁₀ Plan). The 2007 PM₁₀ Plan contains modeling demonstrations that show the Air Basin will not exceed the federal PM₁₀ standard for 10 years after the expected EPA redesignation, monitoring, and verification measures, and it provides a contingency plan. Although the EPA revoked the federal annual PM₁₀ standard, the 2007 PM₁₀ Plan addresses both the annual and 24-hour standards because both standards were included in the EPA-approved SIP. The EPA finalized the determination that the Air Basin attained the PM₁₀ standards effective October 30, 2007. On September 25, 2008, the EPA redesignated the Air Basin as attainment for the federal PM₁₀ standard and approved the PM₁₀ Plan.

The Air Basin is also designated nonattainment for the new federal PM_{2.5} annual standard. The SJVAPCD adopted the 2008 PM_{2.5} Plan on April 30, 2008. ARB considered the 2008 PM_{2.5} Plan at their May 2008 meeting and submitted it to EPA in June 2008. This plan demonstrates the Air Basin will attain the 1997 federal standard by 2014 and make progress toward attaining the 2006 federal 24-

hour standard. Barring delays due to legal challenges, the SJVAPCD estimates that attainment plans for the federal 2006 standard will be required by 2012 or 2013 with an attainment deadline of 2020. Measures contained in the 2003 PM₁₀ Plan will also help reduce PM_{2.5} levels and will provide progress toward attainment until new measures are implemented for the PM_{2.5} Plan, if needed.

Applicable Rules

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

- SJVAPCD Rule 2201 – New and Modified Stationary Source Review.
- SJVAPCD Rule 4002 – National Emission Standards for Hazardous Air Pollutants.
- SJVAPCD Rule 4102 – Nuisance. The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials.
- SJVAPCD Rule 4601 – Architectural Coatings. The purpose of this rule is to limit ROG emissions from architectural coatings. Emissions are reduced by limits on ROG content and providing requirements on coatings storage, cleanup, and labeling.
- SJVAPCD Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit ROG emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641.
- SJVAPCD Regulation VIII – Fugitive PM₁₀ Prohibitions. Rule 8011-8081 are designed to reduce PM₁₀ emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc.
- SJVAPCD Rule 9510 – Indirect Source Review (ISR). The ISR rule places application and emission reduction requirements on development projects meeting applicability criteria in order to reduce emissions through onsite mitigation, offsite SJVAPCD-administered projects, or a combination of the two. Compliance with Rule 9510 is discussed in detail below.
- SJVAPCD Rule 9410 – Employer Based Trip Reduction. The purpose of this rule is reduce vehicle miles traveled (VMT) from private vehicles used by employees to commute to and from their worksites to reduce emissions of NO_x, VOC and PM. The rule would require larger employers (those with 100 or more eligible employees) to establish employee trip reduction programs to reduce VMT, reducing emissions associated with work commutes. The rule uses a menu-based Employer Trip Reduction Implementation Plan and periodic reporting requirements to evaluate performance on a phased-in compliance schedule.

Compliance with Rule 9510 (ISR)

SJVAPCD Rule 9510 – Indirect Source Review (ISR) reduces the impact of NO_x and PM₁₀ emissions from growth in the Air Basin. A master Air Impact Assessment application must be submitted to begin rule compliance; however, because of the size of the overall project and that site design is currently unknown, it is likely that subsequent Air Impact Assessment applications will be submitted for each phase, component or lot of the project.

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

Construction Exhaust:	20 percent of the total NO _x emissions, and 45 percent of the total PM ₁₀ emissions.
Operational Emissions:	33 percent of NO _x emissions over the first 10 years, and 50 percent of the PM ₁₀ emissions over the first 10 years.

Local

City of Patterson *General Plan*

The City of Patterson General Plan sets forth the following goal and policies relevant to air quality and greenhouse gases:

- **Goal T-4:** To consider air quality and noise impacts along with traffic flow efficiency when making decisions about improvements to existing roadways or the construction of new roadways.
- **Policy T-4.1:** Protection of neighborhoods from traffic impacts. To the extent feasible, the City shall provide for separation of residential and other noise-sensitive land uses from major roadways to reduce noise and air pollution impacts from traffic.
- **Goal AR-1:** To foster effective communication, cooperation, and coordination in developing and operating community and regional air quality programs.
- **Policy AR-1.1:** Source regulation. The City shall review development projects using criteria established by the San Joaquin Valley Unified Air Pollution Control District in order to minimize future increases in vehicle travel and to assist in implementing appropriate indirect source regulations adopted by the Air Pollution Control District.

- **Policy AR-1.2:** APCD cooperation. The City shall work with the San Joaquin Valley Unified Air Pollution Control District to ensure the earliest practicable attainment and subsequent maintenance of federal and state ambient air quality standards.
- **Policy AR-1.3:** CEQA. The City shall use the CEQA process to identify and avoid or mitigate potentially significant air quality impacts of new development. The CEQA process shall be used to ensure early consultation with the San Joaquin Valley Unified Air Pollution Control District concerning air quality issues associated with specific development proposals.
- **Policy AR-1.4:** Air quality mitigation. The City shall ensure all air quality mitigation measures are feasible, implementable, and cost effective.
- **Policy AR-1.5:** Innovative strategies. The City shall encourage innovative mitigation measures to reduce air quality impacts by coordinating with the District, project applicants, and other interested parties.
- **Policy AR-1.7:** Neighboring jurisdictions. The City shall work with neighboring jurisdictions and affected agencies to address cross-jurisdictional and regional transportation and air quality issues.
- **Policy AR-1.9:** Air quality and planning. The City shall consider air quality when planning the land uses and transportation systems to accommodate the expected growth in this community.
- **Policy AR-1.14:** Public education. The City shall work to improve the public's understanding of the land use, transportation, and air quality link.
- **Goal AR-2:** To reduce the air quality impacts of motor vehicle use.
- **Policy AR-2.1:** Trip reduction programs. The City shall promote the implementation of innovative employer-based trip reduction programs for employees.
- **Policy AR-2.5:** Commute reduction. The City shall promote the expansion of employment opportunities in Patterson to reduce the volume and distance of home-to-work commute trips by motor vehicle.
- **Goal AR-3:** To Reduce traffic congestion and vehicle trips through more efficient infrastructure and support for trip reduction programs. Reduce the air quality impacts of motor vehicle use.
- **Policy AR-3.1:** Priority to existing roadways. The City shall consider measures to increase the capacity of the existing road network prior to constructing more capacity (additional lanes, new freeways, etc.).
- **Policy AR-3.2:** Promote alternate modes of travel. The City shall work with employers and developers to provide employees and residents with attractive, affordable transportation alternatives.
- **Policy AR-3.4:** Intersection design. Major intersections shall be designed to minimize situations (such as long vehicle delays) which can adversely affect localized air quality.
- **Goal AR-4:** Minimize exposure of the public to toxic air pollutant emissions and noxious odors from industrial, manufacturing, and processing facilities.

- **Policy AR-4.1:** Sensitive receptors. The City shall, to the extent practicable, separate sensitive land uses from significant sources of air pollutants or odor emissions. Sensitive land uses include, but are not limited to, those that support people or other organisms that may have a significantly increased sensitivity or exposure to air pollution by virtue of their age and health (e.g. schools, day care centers, hospitals, nursing homes), status (e.g. sensitive or endangered species), or proximity to the source. The City shall require residential development projects and projects categorized as sensitive receptors to be located an adequate distance from existing and potential sources of toxic emissions such as freeways, major arterials, industrial sites, and hazardous material locations. For purposes of compliance with this policy, the City will be guided by the recommendations provided in the Air Quality and Land Use Handbook: A Community Health Perspective published by the California Air Resources Board.
- **Policy AR-4.1:** Industrial uses. The City shall notify, and coordinate with, the San Joaquin Valley Unified Air Pollution Control District when industrial developments are proposed that may adversely impact air quality. Such coordination may include, but is not limited to, providing assistance to applicants in complying with applicable air quality regulations.
- **Goal AR-5:** Reduce particulate emissions from sources under the jurisdiction of the city.
- **Policy AR-5.1:** Particulates from grading. The City shall work with the District to reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible.
- **Policy AR-5.2:** Roadways. The City shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.
- **Policy AR-5.3:** City maintained roads. The City shall reduce PM₁₀ emissions from City/County maintained roads to the maximum extent feasible.
- **Goal AR-6:** Reduce emissions related to energy consumption and area sources.
- **Policy AR-6.1:** Energy efficient design. The City shall work with the local energy providers and developers on voluntary incentive-based programs to encourage the use of energy efficient designs and equipment.
- **Policy AR-6.2:** Energy conservation standards. The City shall cooperate with the local building industry, utilities and the District to promote enhanced energy conservation standards for new construction.
- **Policy AR-6.3:** Vehicle idling reduction. The City shall implement circulation improvements that reduce vehicle idling.
- **Goal AR-7:** To reduce to the emission of greenhouse gases and to promote energy efficiency.
- **Policy AR-7.1:** Climate Action Plan. The City shall comply with the relevant provisions of State law (i.e. AB 32 and SB 375) to minimize the effect of citywide greenhouse gas emissions associated with buildout of the General Plan. This shall be achieved through the implementation of a Climate Action Plan.
- **Policy AR-7.2:** Greenhouse gas reduction goal. The City shall work with the Air Resources Board and the San Joaquin Valley Unified Air Pollution Control District to comply with

statewide greenhouse gas reduction goals as established in the Global Warming Solutions Act of 2006 (AB 32) for 2020, and subsequent goals.

- **Policy AR-7.3:** Greenhouse gas emissions from new development. The City shall implement measures to reduce the emission of greenhouse gases from new development. Such measures may include, but are not limited to, the following:
 - a. Discouraging auto-dependent patterns of development;
 - b. Promoting compact, mixed-use, pedestrian-friendly, and transit oriented development;
 - c. Promoting energy-efficient building design and site planning using either Build It Green and LEED™ Silver standards for residential and non-residential buildings, respectively; and
 - d. Working to improve the ratio of jobs to housing.
- **Policy AR-7.4:** Passive solar heating. To the extent feasible, the City shall require the orientation of buildings to maximize passive solar heating during cool seasons, avoid solar heat gain in warm seasons, enhance natural ventilation and effective use of daylight, and to maximize opportunities for the installation of solar panels.

3.3.4 - Methodology

The methodology follows the GAMAQI, which sets forth recommended thresholds of significance, analysis methodologies, and provides guidance on mitigating significant impacts.

The analysis that follows was prepared using a variety of data sources and air quality models. The Traffic Impact Study for the project, prepared by TJKM Transportation Consultants was used to obtain intersection volumes for the CO Hotspot Analysis. ITE average daily trip generation rates were used to model operational motor vehicle emissions.

The URBEMIS 2007 model (version 9.2.4) was used to quantify construction-generated emissions. URBEMIS is a California-specific computer model that is owned and modified by the local air pollution control districts and air quality management districts in the State of California. URBEMIS estimates construction, area source, and operational emissions from potential land uses, using the most recent approved version of relevant ARB emissions models and emission factors and/or District-specific emission factors; and estimates emissions reductions. URBEMIS is widely used to conduct CEQA-related air quality studies and is recommended for use by the SJVAPCD for estimating project emissions. Construction emissions from the proposed Offsite Utility Alignments were estimated separately from the construction of the proposed West Patterson Business Park Expansion Project.

Annual increases in vehicular and area emissions associated with the project were estimated using the URBEMIS. Construction emissions for the project were also modeled using URBEMIS. Carbon dioxide emissions were estimated using URBEMIS. Methane and nitrous oxide emissions were estimated using emission factors as described in Appendix C. An interim onsite wastewater treatment plant may be constructed as part of the project. However, the location, size, components, and

duration of use, if selected, are currently unknown. Therefore, impacts from operation of the potential wastewater treatment plant are assessed qualitatively in the analysis.

Detailed methodology is described in each of the Impact sections below.

3.3.5 - Thresholds of Significance

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

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

Would the project:

- a.) Conflict with or obstruct implementation of the applicable air quality plan?
 - b.) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
 - c.) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?
 - d.) Expose sensitive receptors to substantial pollutant concentrations?
- Create objectionable odors affecting a substantial number of people?

On February 16, 2010, the Office of Administrative Law filed the CEQA Guideline Amendments with the Secretary of State. The Amendments became effective on March 18, 2010. The CEQA Guidelines amendments included two new checklist questions pertaining to greenhouse gas emissions, listed below:

Would the project:

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

This analysis will follow the guidance in the CEQA Guideline Amendments.

While the final determination of whether or not a project is significant is within the purview of the lead agency pursuant to CEQA Guidelines Section 15064(b), the SJVAPCD recommends that its quantitative and qualitative air pollution thresholds be used to determine the significance of project emissions. These thresholds are discussed under each impact section below.

3.3.6 - Project Impacts and Mitigation Measures

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

Air Quality Attainment Plan Consistency

Impact AIR-1: **The proposed project may conflict with or obstruct implementation of the applicable air quality plan.**

Impact Analysis

This impact will evaluate the proposed West Patterson Business Park Expansion Project's and Offsite Utility Alignments' potential to violate any air quality standard or contribute substantially to an existing or projected air quality violation as a result of construction or operational emissions.

Threshold of Significance

The CEQA Guidelines indicate that a significant impact would occur if the proposed project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI does not provide specific guidance on analyzing conformity with the Air Quality Plan (AQP). Therefore, the City will use the following criteria for determining project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs? This measure is determined by comparison to the regional and localized thresholds identified by the SJVAPCD for Regional and Local Air Pollutants.
2. Will the project conform to the assumptions in the AQPs?
3. Will the project comply with applicable control measures in the AQPs?

The use of the criteria listed above is a standard approach for CEQA analysis of projects in the SJVAPCD's jurisdiction, as well as within other air districts, for the following reasons:

- Significant contribution to existing or new exceedances of the air quality standards would be inconsistent with the goal of attaining the air quality standards.
- AQP emissions inventories and attainment modeling is based on growth assumptions for the area within the air district's jurisdiction,

- AQPs rely on a set of air district-initiated control measures, as well as implementation of federal and state measures, to reduce emissions within their jurisdiction with the goal of attaining the air quality standards.

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AQPs are plans for reaching attainment of air quality standards. The assumptions, inputs, and control measures are analyzed to determine if the Air Basin can reach attainment for the ambient air quality standards. In order to show attainment of the standards, SJVAPCD analyzes the growth projections in the valley, contributing factors in air pollutant emissions and formations and existing and future emissions controls. The SJVAPCD then formulates a control strategy to reach attainment.

Project's Contribution to Air Quality Violations

A measure of determining if the project is consistent with the AQP is if the project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs. As shown in Impact AIR-2, the construction and the operation would not exceed the SJVAPCD's thresholds for localized impacts. As shown in the discussion in Impact AIR-3, construction and operation of the project would exceed the SJVAPCD's thresholds for nonattainment pollutants.

Consistency with Assumptions in AQPs

The primary way of determining consistency with the AQP's assumptions is determining consistency with the applicable General Plan to ensure that the project's population density and land use are consistent with the growth assumptions used in the AQPs for the air basin.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designates locations for land uses to regulate growth. The Stanislaus Council of Governments (StanCOG) uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then vehicle miles traveled (VMT), which are then provided to SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP are based on land uses from area general plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards.

The project site is designated "Agriculture" by the County of Stanislaus General Plan, and "Light Industrial" and "General Commercial" by the City of Patterson's General Plan. As discussed in Section 3.9, Land Use, the applicable General Plan for the project is the City of Patterson General Plan. The City's General Plan was adopted in 2010, after the SJVAPCD's adoption of the applicable AQPs. Although the project would be consistent with the City's General Plan, as detailed in Section 3.9, Land Use, Impact LU-1, and the project's population growth and VMT are consistent with the General Plan, the project would not be consistent with the growth assumptions used in the applicable

AQPs due to the timing of the General Plan development. Accordingly, it can be concluded the proposed project's uses are not consistent with the growth and vehicle miles traveled projections contained in the AQP. The project impact is potentially significant for this criterion.

The proposed project would implement several mitigation measures that would partially alleviate this inconsistency, including Mitigation Measures AIR-3a, AIR-3b, PSU-6a, PSU-6b, and TRANS-6. These measures would promote emissions reductions in various ways; however, they would not fully mitigate impacts to a level of less than significant. Therefore, the impact would be significant and unavoidable.

Control Measures

The AQP contains a number of control measures, including the rules outlined by the SJVAPCD. The control measures in the AQP are enforceable requirements. The project will comply with all of the SJVAPCD's applicable rules and regulations. Therefore, the project complies with this criterion.

Offsite Utility Alignments

The Offsite Utility Alignments would not result in any increase of operational emissions that exceed the SJVAPCD's significance criteria, require any changes to land use, require a general plan amendment or rezone, or result in changes to population projections in the area. Therefore, the Offsite Utility Alignments is consistent with the applicable attainment plans.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures AIR-3a, AIR-3b, PSU-6a, PSU-6b, and TRANS-6.

Level of Significance After Mitigation

Significant unavoidable impact.

Air Quality Standard Violation

Impact AIR-2:	The project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation.

Impact Analysis

This impact will assess the potential for the proposed West Patterson Business Park Expansion Project and Offsite Utility Alignments' potential to generate a localized exceedance of any federal or state ambient air quality standard. The localized pollutants of concern for this impact are CO, NO₂, SO₂, PM₁₀ and PM_{2.5}. In addition, this impact will assess the potential for the proposed West Patterson Business Park Expansion Project and Offsite Utility Alignments' potential to generate a localized fugitive dust (PM₁₀) impact.

Threshold of Significance

A significant impact would result if the change in the NO₂, SO₂, or CO pollutant impacts from the addition of the project plus the background concentrations of these pollutants contributed by other local and regional emission sources exceeds the most restrictive ambient air quality standards. The significance thresholds identified for PM₁₀ and PM_{2.5} require a different characterization. Although the Air Basin has not violated the national ambient air quality standards or PM₁₀ in the past five years, it has violated the state standard for PM₁₀ during the past several years. The Air Basin also exceeds both the national and state PM_{2.5} air standards. However, the SJVAPCD has not adopted local significance thresholds for either PM₁₀ or PM_{2.5}, but instead relies on the application of the EPA’s significance impact levels for these two pollutants.

For pollutants where the air basin is classified as non attainment under either the federal or state ambient air quality standards such as in the Air Basin for PM₁₀ and PM_{2.5}, the significance approach accepted by local, state, and federal air agencies is to identify a significant impact level based on a level of increase determined to be *de minimus* by the EPA. CEQA case law (*Kings County Farm Bureau v. the City of Hanford*) established that the threshold in this case is not one additional molecule (or particle), which would require an EIR for any new development while the area was in non-attainment. The ruling stated, “The relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin.” Therefore, for purposes of this assessment, the EPA significant impact levels contained in Title 40, Part 51, (51.165(b)(2)) of the Code of Federal Regulations were adopted to assess the significance of the change in particulate matter impacts from the project. Significant impact levels are a screening tool used to determine whether a proposed source’s emissions will have a significant impact on air quality. If an individual project’s impacts are less than the corresponding significant impact levels, its impact is said to be *de minimis*. Significant impact levels are also used to determine whether a proposed source’s impact on an existing violation of a standard is significant enough that it is considered to “cause or contribute to” the violation.

The criteria pollutant significance thresholds applied in this assessment are summarized in Table 3.3-7. A significant impact would occur if the change in any pollutant exceeds the appropriate significance threshold.

Table 3.3-7: Criteria Pollutant Localized Operational Significance Threshold Summary

Pollutant	Air Concentration Threshold	Regulatory Authority
CO	20 ppm (1-hour) 9 ppm (8-hour)	State Standard State/National Standard
NO ₂	0.10 ppm (3-year average of the 98 th percentile of maximum daily 1-hour average). 0.18 ppm (1-hour) 0.03 ppm (annual)	National Standard State Standard State Standard

Table 3.3-7 (cont.): Criteria Pollutant Localized Operational Significance Threshold Summary

Pollutant	Air Concentration Threshold	Regulatory Authority
PM ₁₀	5 µg/m ³ (24-hour) 1 µg/m ³ (annual)	EPA 40 CFR Parts 51 and 52 (SIL) EPA 40 CFR Parts 51 and 52 (SIL)
PM _{2.5}	1.2 µg/m ³ (24-hour) 0.3 µg/m ³ (annual)	EPA 40 CFR Parts 51 and 52 (SIL) EPA 40 CFR Parts 51 and 52 (SIL)
SO ₂	0.25 ppm (1-hour) 0.075 ppm (3-year average of the 99 th percentile of the maximum daily 1-hour average) 0.50 ppm (3-hour average) 0.04 ppm (24-hour average) 0.03 ppm (annual)	State Standard National Standard National Standard State Standard State Standard

CO Hotspot

A carbon monoxide (CO) hotspot analysis is the appropriate tool to determine if project emissions of CO during operation would exceed ambient air quality standards. The main source of air pollutant emissions during operation are from offsite motor vehicles traveling on the roads surrounding the project site.

Project emissions may be considered significant if a CO hotspot intersection analysis determines that project-generated emissions cause a localized violation of the state CO 1-hour standard of 20 parts per million (ppm), state CO 8-hour standard of 9 ppm, federal CO 1-hour standard of 35 ppm, or federal CO 8-hour standard of 9 ppm.

Because increased CO concentrations are usually associated with roadways that are congested and with heavy traffic volume, the SJVAPCD has established that preliminary screening can be used to determine with fair certainty that the effect a project has on any given intersection would not cause a potential CO hotspot. Therefore, the SJVAPCD has established that if all project-affected intersections are negative for both of the following criteria, then the project can be said to have no potential to create a violation of the CO standard, which are 20 ppm and 9 ppm, respectively (see Table 3.3-7):

- A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or
- A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the project vicinity.

If either of the criteria can be associated with any intersection affected by the project, a CO Protocol Analysis must be prepared to determine significance.

Fugitive Dust

For construction, the SJVAPCD recommends that fugitive dust (PM₁₀) significance be based on the control measures to be implemented during project construction (SJVAPCD 2002). Compliance with Regulation VIII and implementation of appropriate dust-suppression and prevention mitigation measures are considered sufficient to render a project's construction-related PM₁₀ impacts less than significant.

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CO Hotspot

This analysis follows guidelines recommended by the CO Protocol prepared by the University of California Davis in 1997. To provide a worst-case scenario, CO concentrations are estimated at project-impacted intersections, where the concentrations would be the greatest.

The Traffic Impact Study for the project showed that five intersections would operate at an LOS of E or F in the project vicinity in the Existing plus Approved Phase 1 Project scenario, and 20 in the 2035 Cumulative plus Project Traffic scenario (under existing intersection configurations). With identified improvements and planned improvements, those intersections are projected to operate within acceptable levels of service and would not meet the SJVAPCD screening criteria. Therefore, analysis of potential CO hotspots at these locations represents a particularly conservative approach. Because the greatest CO concentration potential exists at the intersections, the roadway segments were not evaluated. If the intersections would not violate the CO standard, then the roadway segments, which experience greater dispersion and decreased CO concentration levels, would also not violate the CO standard.

CALINE4 is a dispersion model used to estimate the concentration of CO along roadways and intersections and is recommended by the SJVAPCD for estimating potential CO hotspots. Using the CALINE4 model, potential CO hotspots were analyzed at the two highest-delay (120 second) intersections with the highest traffic volume for Existing plus Approved Projects plus Project scenario the 2035 Cumulative plus Project Traffic scenario meeting the SJVAPCD screening criteria (prior to mitigation) according to the Traffic Impact Study prepared for this project. The emission factors were generated using the EMFAC2011 model for the years 2020 and 2030 for the San Joaquin Valley Air Basin. The intersections analyzed are:

Existing plus Phase 1 Project Scenario

- Sperry Avenue and Interstate 5 Southbound Ramps (Intersection 1) in the PM peak hour
- Sycamore Avenue and E. Las Palmas Avenue (Intersection 22) in PM peak hour

2035 Cumulative plus Project Scenario

- Sperry Avenue and Rogers Avenue (Intersection 3) in PM peak hour
- Sperry Avenue and Baldwin Road (Intersection 4) in the PM peak hour

As shown in Table 3.3-8, the estimated 1-hour and 8-hour average CO concentrations at buildout in combination with background concentrations are below the state and national ambient air quality standards. No CO hotspots are anticipated as a result of traffic-generated emissions by the project in combination with other anticipated development in the area. Therefore, the mobile emissions of CO from the project are not anticipated to contribute substantially to an existing or projected air quality violation of CO. Impacts would be less than significant.

Table 3.3-8: Carbon Monoxide Concentrations at Intersections

Intersection	Scenario	CO Concentrations (ppm)		Significant Impact? ³
		1 Hour ¹	8 Hour ²	
(1) Sperry Avenue/I-5 SB Ramps	Existing plus Phase 1 Project (PM)	3.7	2.6	No
(22) Sycamore/E. Las Palmas	Existing plus Phase 1 Project (PM)	3.8	2.7	No
(3) Sperry/Rogers	2035 Cumulative plus Project (PM)	3.9	2.8	No
(4) Sperry/Baldwin	2035 Cumulative plus Project (PM)	3.8	2.7	No
Notes: SB = Southbound ¹ CALINE4 output (see Appendix C for model output) plus the highest 1-hour background concentration during the past 3 years of 3.44 ppm (Table 3.3-2). ² The 8-hour Long Term With Project caused increment was calculated by multiplying the 1-hour CALINE4 output by 0.7 (persistence factor), then adding the highest 8-hour background concentration during the past 3 years of 2.41 ppm (from Table 3.3-2). ³ Comparison of the 1-hour concentration to the state standard of 20 ppm and the 8-hour concentration to the state/national standard of 9 ppm. Source: Michael Brandman Associates, 2012.				

Fugitive Dust

Localized PM₁₀ would be generated by project construction activities, which would include earth-disturbing activities. The proposed project would comply with the SJVAPCD's Regulation VIII dust control requirements during construction and demolition (including Rules 8011, 8021, 8031, 8041, 851, 8061, and 8071).

The SJVAPCD's GAMAQI lists additional measures that may be required because of sheer project size or proximity of the project to sensitive receptors. If all appropriate "enhanced control measures" in the GAMAQI are not implemented for these very large or sensitive projects, then construction impacts would be considered significant (unless the Lead Agency provides a satisfactory detailed explanation as to why a specific measure is unnecessary). The GAMAQI also lists additional control measures that may be implemented if further emission reductions are deemed necessary by the Lead Agency. The enhanced and additional PM₁₀ control measures listed in GAMAQI were incorporated into SJVAPCD's Regulation VIII requirements after the adoption of the GAMAQI. Therefore, the measures listed as enhanced and additional by the GAMAQI are now requirements of Regulation VIII.

Therefore, compliance with Regulation VIII would reduce the potential for significant localized PM₁₀ impacts from fugitive dust to less than significant levels.

NO₂, SO₂, CO, PM₁₀ and PM_{2.5} Hotspots

An air dispersion model was applied to estimate the ambient air quality impacts from the operation of the project. The air quality analysis requires the specification of operational emissions, a receptor network where the air quality impacts are estimated, and meteorological data that describe the direction and rate of transport of the project's emissions from the project to the surrounding environment.

Operational emissions of NO₂, CO, PM₁₀, and PM_{2.5} were estimated based on the peak hour and daily vehicle trips contained in the project's traffic impact report, vehicle trip lengths, idling time, vehicle speed, and emission factors derived from the ARB EMFAC2011 mobile source emission model. The vehicle and truck fleet, which was tailored to reflect the three major land uses, is the same as what was used in the Health Risk Assessment and in the operational criteria pollutant assessment. The project-specific vehicle and truck fleet mix is provided in Table 3.3-9 and Table 3.3-10

Table 3.3-9: West Patterson Business Park Expansion Daily Vehicle Mix

Vehicle Type (gross vehicular weight)	Percent of Fleet by Land Use ¹		
	Light Industrial	Business Park	Shopping Center
Light Auto	38.0%	25.6%	48.2%
Light Truck (<3,7850 lbs)	10.8%	7.3%	13.7%
Light Truck ((3,751 to 5,750 lbs)	19.1%	12.8%	24.2%
Medium Truck (5,751 to 58,500 lbs)	10.6%	7.1%	13.4%
Light-Heavy Truck (8,501 to 10,000 lbs)	4.8%	2.5%	0.0%
Light-Heavy Truck (10,001 to 14,000 lbs)	2.2%	1.2%	0.3%
Medium-Heavy Truck (14,001 to 33,000 lbs)	3.8%	3.4%	0.0%
Heavy-Heavy Truck (33,001 to 60,000 lbs)	10.6%	40.1%	0.2%
All others	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%
Notes: ¹ Land use designations reflect the designations used in the Traffic Impact Study and the URBEMIS model. lbs = pounds Source: Michael Brandman Associates, 2012.			

Table 3.3-10: West Patterson Business Park Expansion Peak Hour Vehicle Mix

Vehicle Type (gross vehicular weight)	Percent of Fleet by Land Use ¹		
	Light Industrial	Business Park	Shopping Center
Light Auto	33.7%	45.0%	48.2%
Light Truck (<3,7850 lbs)	9.6%	12.8%	13.7%
Light Truck ((3,751 to 5,750 lbs)	16.9%	22.6%	24.2%
Medium Truck (5,751 to 58,500 lbs)	9.4%	12.6%	13.4%
Light-Heavy Truck (8,501 to 10,000 lbs)	6.8%	0.4%	0.0%
Light-Heavy Truck (10,001 to 14,000 lbs)	3.1%	0.2%	0.3%
Medium-Heavy Truck (14,001 to 33,000 lbs)	5.4%	0.5%	0.0%
Heavy-Heavy Truck (33,001 to 60,000 lbs)	15.0%	5.9%	0.2%
All others	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%
Notes: ¹ Land use designations reflect the designations used in the Traffic Impact Study and the URBEMIS model. lbs = pounds Source: Michael Brandman Associates, 2012.			

Emissions were estimated for four time periods, corresponding to each of the four development phases – Phase 1 (2023), Phase 2 (2028), Phase 3 (2031), and Phase 4 (2032). Note that potential SO₂ impacts are negligible and are not reported. Table 3.3-11 summarizes the assumptions that were used to estimate the project's operational emissions. Table 3.3-12 summarizes the assumptions used in the air dispersion model.

Table 3.3-11: Assumptions Used to Estimate Operational Emissions

Parameter	Assumption
Years	Phase 1 (2023), Phase 2 (2028), Phase 3 (2031), and Phase 4 (2032)
Emission Model	- EMFAC2011 for travel exhaust emissions - EMFAC2011 for idling emissions
Pollutants ⁽¹⁾	CO, NO₂, PM₁₀, and PM_{2.5}
Vehicle Speed	15 mph
Truck Idling Time	15 minutes per truck per day
Vehicle Trips	- Based on the project traffic study with the passenger car/truck fleet mix based on the Fontana truck trip generation study (Fontana 2003) - Vehicle trips were allocated to each land use within each development phase
Vehicle Trip Lengths	Based on the average trip length from the project entrances to the center of each land use within each development phase
Note: ⁽¹⁾ SO ₂ emissions were not estimated since the project would generate insignificant amounts of SO ₂ emissions. Source: Michael Brandman Associates, 2012.	

Table 3.3-12: Air Dispersion Model Assumptions

Parameter	Geometric Configuration	Relevant Assumptions
Onsite Vehicle Traffic	Area source	- An area source was established within the model for each land use and development phase in accordance with the project development plan. - An emission release height of 7 feet was used as a weighted average of the running emissions (6 feet) and idling emissions (12 feet)
Facility Operations	All facilities	24/7 365 days/yr
Background Air Quality	All Facilities	Derived from the Modesto and Turlock air and quality data (see Table 3.3-2)
Meteorological Data	All Facilities	SJVAPCD Modesto station (2005-2009)
Air Quality Significance Thresholds	All Facilities	Table 3.3-7
Source: Michael Brandman Associates, 2012.		

The results of the air dispersion modeling for the four development phases are summarized in Table 3.3-13 through Table 3.3-20 for CO, NO₂, PM₁₀, and PM_{2.5}.

Table 3.3-13: Project Air Quality Impacts for CO and NO₂ – Phase 1

Pollutant	Averaging Time	Background Air Quality ⁽¹⁾ (ppm)	Project Impact ⁽²⁾ (ppm)	Background + Project Impact (ppm)	Significance Threshold ⁽³⁾ (ppm)	Exceeds Threshold?
CO	1 Hour ⁽⁴⁾	3.4	0.800	4.200	20.0	No
	8 Hour	2.4	0.100	2.500	9.0	No
NO ₂	1-hour ⁽⁵⁾	0.063	0.088	0.151	0.18	No
	1 Hour ⁽⁶⁾	0.049	0.039	0.085	0.10	No
	Annual	0.012	0.001	0.013	0.030	No
Notes: ⁽¹⁾ The highest concentrations measured during the most recent 3-year period of 2008 to 2010 or from the 98th percentile data collected by the SJVAPCD for NO₂ ⁽²⁾ The impacts noted under the column labeled “Project Impact” were determined as the highest impacts at any nearby sensitive receptor (residence) and do not include receptors that are located within parking lots, along the project fence line, vacant land, or roadways. The principal emphasis was on estimating impacts at locations where residences could be impacted. The maximum project impacts were found in the recreation park located at the southern end of the project. ⁽³⁾ Significance thresholds derived from Table 3.3-7 ⁽⁴⁾ 1-hour average background CO was derived by dividing the 8-hr average CO by 0.7 since the 1-hour average is not routinely reported by ARB (UCD 1997) ⁽⁵⁾ 1-hour California State standard ⁽⁶⁾ The background 1-hour NO₂ is the three-year average of the 98th percentile NO₂ concentrations at the air monitoring station in Turlock. The maximum incremental Project NO₂ 1-hour impact is the 98th percentile modeled NO₂ concentration using the Ozone Limiting Method to convert NO_x to NO₂ Source: Michael Brandman Associates, 2012.						

Table 3.3-14: Project Air Quality Impacts for PM₁₀ and PM_{2.5} – Phase 1

Pollutant	Averaging Time	Project Impact ⁽¹⁾ (µg/m ³)	Significance Threshold ⁽²⁾ (µg/m ³)	Exceed Thresholds ?
PM ₁₀	24 Hour	0.20	5	No
	Annual	0.04	1	No
PM _{2.5}	24 Hour	0.18	1.2	No
	Annual	0.04	0.3	No

Notes:

PM₁₀ and PM_{2.5} = particulate matter; µg/m³ = micrograms per cubic meter (a unit of concentration)

⁽¹⁾ The impacts noted under the column labeled “Project Impact” were determined as the highest impacts at any nearby sensitive receptor (existing residence) and do not include receptors that are located within parking lots, along the project fence line, vacant land, or roadways. The principal emphasis was on estimating impacts at locations where residences could be impacted. The maximum project impacts were found in the recreation park located at the southern end of the project.

⁽²⁾ Table 3.3-7

Source: Michael Brandman Associates, 2012.

Table 3.3-15: Project Air Quality Impacts for CO and NO₂ – Phases 1 and 2

Pollutant	Averaging Time	Background Air Quality ⁽¹⁾ (ppm)	Project Impact ⁽²⁾ (ppm)	Background + Project Impact (ppm)	Significance Threshold ⁽³⁾ (ppm)	Exceeds Threshold?
CO	1 Hour ⁽⁴⁾	3.400	1.000	4.400	20.00	No
	8 Hour	2.400	0.200	2.600	9.00	No
NO ₂	1-hour ⁽⁵⁾	0.063	0.110	0.173	0.18	No
	1 Hour ⁽⁶⁾	0.049	0.039	0.088	0.10	No
	Annual	0.012	<0.001	0.013	0.030	No

Notes:

⁽¹⁾ The highest concentrations measured during the most recent 3-year period of 2008 to 2010 or from the percentile data collected by the SJVAPCD for NO₂

⁽²⁾ The impacts noted under the column labeled “Project Impact” were determined as the highest impacts at any nearby sensitive receptor (existing residential) and do not include receptors that are located within parking lots, along the project fence line, vacant land, or roadways. The principal emphasis was on estimating impacts at locations where residences could be impacted. The maximum project impacts were found in an area zoned for residential across Rogers Road to the east of the project. The maximum project impacts were found in the recreation park located at the southern end of the project.

⁽³⁾ Significance thresholds derived from Table 3.3-7.

⁽⁴⁾ 1-hour average background CO was derived by dividing the 8-hr average CO by 0.7, since the 1-hour average is not routinely reported by CARB (UCD 1997)

⁽⁵⁾ 1-hour California State standard

⁽⁶⁾ The background 1-hour NO₂ is the 3-year average of the 98th percentile NO₂ concentrations at the air monitoring station in Turlock. The maximum incremental Project NO₂ 1-hour impact is the 98th percentile modeled NO₂ concentration using the Ozone Limiting Method to convert NO_x to NO₂.

Source: Michael Brandman Associates, 2012.

Table 3.3-16: Project Air Quality Impacts for PM₁₀ and PM_{2.5} – Phases 1 and 2

Pollutant	Averaging Time	Project Impact ⁽¹⁾ (µg/m ³)	EPA SIL Significance Threshold ⁽²⁾ (µg/m ³)	Exceed Thresholds?
PM ₁₀	24 Hour	0.21	5	No
	Annual	0.03	1	No
PM _{2.5}	24 Hour	0.19	1.2	No
	Annual	0.03	0.3	No

Notes:

PM₁₀ and PM_{2.5} = particulate matter; µg/m³ = micrograms per cubic meter (a unit of concentration)

⁽¹⁾ The impacts noted under the column labeled “Project Impact” were determined as the highest impacts at any nearby sensitive receptor (existing residential) and do not include receptors that are located within parking lots, along the project fence line, vacant land, or roadways. The principal emphasis was on estimating impacts at locations where residences could be impacted. The maximum project impacts were found in an area zoned for residential across Rogers Road to the east of the project. The maximum project impacts were found in the recreation park located at the southern end of the project.

⁽²⁾ EPA SIL = Title 40, Part 51, (51.165(b)(2)) of the Code of Federal Regulations and SJVAPCD 2011a
Source: Michael Brandman Associates, 2012.

Table 3.3-17: Project Air Quality Impacts for CO and NO₂ – Phases 1, 2, and 3

Pollutant	Averaging Time	Background Air Quality ⁽¹⁾ (ppm)	Project Impact ⁽²⁾ (ppm)	Background + Project Impact (ppm)	Significance Threshold ⁽³⁾ (ppm)	Exceeds Threshold?
CO	1 Hour ⁽⁴⁾	3.4	1.0	4.4	20.0	No
	8 Hour	2.4	0.2	2.6	9.0	No
NO ₂	1-hour ⁽⁵⁾	0.063	0.116	0.179	0.18	No
	1 Hour ⁽⁶⁾	0.049	0.039	0.088	0.10	No
	Annual	0.012	<0.001	0.013	0.030	No

Notes:

⁽¹⁾ The highest concentrations measured during the most recent 3-year period of 2008 to 2010 or from the percentile data collected by the SJVAPCD for NO₂.

⁽²⁾ The impacts noted under the column labeled “Project Impact” were determined as the highest impacts at any nearby sensitive receptor (existing residential) and do not include receptors that are located within parking lots, along the project fence line, vacant land, or roadways. The principal emphasis was on estimating impacts at locations where residences could be impacted. The maximum project impacts were found in an area zoned for residential across Rogers Road to the east of the project. The maximum project impacts were found in the recreation park located at the southern end of the project.

⁽³⁾ Significance thresholds derived from Table 3.3-7.

⁽⁴⁾ 1-hour average background CO was derived by dividing the 8-hr average CO by 0.7 since the 1-hour average is not routinely reported by CARB (UCD 1997).

⁽⁵⁾ 1-hour California State standard

⁽⁶⁾ The background 1-hour NO₂ is the 3-year average of the 98th percentile NO₂ concentrations at the air monitoring station in Turlock. The maximum incremental Project NO₂ 1-hour impact is the 98th percentile modeled NO₂ concentration using the Ozone Limiting Method to convert NO_x to NO₂.

Source: Michael Brandman Associates, 2012.

Table 3.3-18: Project Air Quality Impacts for PM₁₀ and PM_{2.5} – Phases 1, 2, and 3

Pollutant	Averaging Time	Project Impact ⁽¹⁾ (µg/m ³)	EPA SIL Significance Threshold ⁽²⁾ (µg/m ³)	Exceed Thresholds?
PM ₁₀	24 Hour	0.22 µg/m ³	5	No
	Annual	0.05 µg/m ³	1	No
PM _{2.5}	24 Hour	0.20 µg/m ³	1.2	No
	Annual	0.05 µg/m ³	0.3	No

Notes:

PM₁₀ and PM_{2.5} = particulate matter; µg/m³ = micrograms per cubic meter (a unit of concentration);

⁽¹⁾ The impacts noted under the column labeled “Project Impact” were determined as the highest impacts at any nearby sensitive receptor (existing residential) and do not include receptors that are located within parking lots, along the project fence line, vacant land, or roadways. The principal emphasis was on estimating impacts at locations where residences could be impacted. The maximum project impacts were found in an area zoned for residential across Rogers Road to the east of the project. The maximum project impacts were found in the recreation park located at the southern end of the project.

⁽²⁾ EPA SIL = Title 40, Part 51, (51.165(b)(2)) of the Code of Federal Regulations and SJVAPCD 2011a

Source: Michael Brandman Associates, 2012.

Table 3.3-19: Project Air Quality Impacts for CO and NO₂ – Phases 1 to 4

Pollutant	Averaging Time	Background Air Quality ⁽¹⁾ (ppm)	Project Impact ⁽²⁾ (ppm)	Background + Project Impact (ppm)	Significance Threshold ⁽³⁾ (ppm)	Exceeds Threshold?
CO	1 Hour ⁽⁴⁾	3.4	1.0	4.4	20.0	No
	8 Hour	2.4	0.2	2.6	9.0	No
NO ₂	1-hour ⁽⁵⁾	0.063	0.116	0.179	0.18	No
	1 Hour ⁽⁶⁾	0.049	0.039	0.088	0.10	No
	Annual	0.012	<0.001	0.013	0.030	No

Notes:

⁽¹⁾ The highest concentrations measured during the most recent 3-year period of 2008 to 2010 or from the percentile data collected by the SJVAPCD for NO₂.

⁽²⁾ The impacts noted under the column labeled “Project Impact” were determined as the highest impacts at any nearby sensitive receptor (existing residential) and do not include receptors that are located within parking lots, along the project fence line, vacant land, or roadways. The principal emphasis was on estimating impacts at locations where residences could be impacted. The maximum project impacts were found in an area zoned for residential across Rogers Road to the east of the project. The maximum project impacts were found in the recreation park located at the southern end of the project.

⁽³⁾ Significance thresholds derived from Table 3.3-7.

⁽⁴⁾ 1-hour average background CO was derived by dividing the 8-hr average CO by 0.7 since the 1-hour average is not routinely reported by CARB (UCD 1997)

⁽⁵⁾ 1-hour California State standard

⁽⁶⁾ The background 1-hour NO₂ is the 3-year average of the 98th percentile NO₂ concentrations at the air monitoring station in Turlock. The maximum incremental Project NO₂ 1-hour impact is the 98th percentile modeled NO₂ concentration using the Ozone Limiting Method to convert NO_x to NO₂.

Source: Michael Brandman Associates, 2012.

Table 3.3-20: Project Air Quality Impacts for PM₁₀ and PM_{2.5} – Phases 1 to 4

Pollutant	Averaging Time	Project Impact ⁽¹⁾ (µg/m ³)	EPA SIL Significance Threshold ⁽²⁾ (µg/m ³)	Exceed Thresholds?
PM ₁₀	24 Hour	0.21 µg/m ³	5	No
	Annual	0.04µg/m ³	1	No
PM _{2.5}	24 Hour	0.19 µg/m ³	1.2	No
	Annual	0.04 µg/m ³	0.3	No

Notes:

PM₁₀ and PM_{2.5} = particulate matter; µg/m³ = micrograms per cubic meter (a unit of concentration);

⁽¹⁾ The impacts noted under the column labeled “Project Impact” were determined as the highest impacts at any nearby sensitive receptor (existing residential) and do not include receptors that are located within parking lots, along the project fence line, vacant land, or roadways. The principal emphasis was on estimating impacts at locations where residences could be impacted. The maximum project impacts were found in an area zoned for residential across Rogers Road to the east of the project. The maximum project impacts were found in the recreation park located at the southern end of the project.

⁽²⁾ EPA SIL = Title 40, Part 51, (51.165(b)(2)) of the Code of Federal Regulations and SJVAPCD 2011a
Source: Michael Brandman Associates, 2012.

As noted from the above tables, project emissions at the various project phase development years would not exceed the localized operational significance thresholds for NO₂, SO₂, CO, PM₁₀, or PM_{2.5} and, therefore, would not cause or contribute substantially to an air quality violation or localized exceedance of those criteria pollutants.

Offsite Utility Alignments

CO Hotspot

The Offsite Utility Alignments consists of the construction of three sewer pipeline alignments. As discussed in Section 2, Project Description, changes to the existing wastewater processing facilities from anticipated expansion have been assessed under a separate environmental review under CEQA. The Offsite Utility Alignments would not result in a long-term increase or decrease ongoing roadway traffic. Although the Offsite Utility Alignments would generate a short-term increase in roadway traffic associated with materials and soils hauling, the Offsite Utility Alignments would not generate additional operational trips beyond those currently occurring. The SJVAPCD’s guidance does not provide a threshold for construction activities, as construction impacts are temporary. Therefore, in accordance with the SJVAPCD’s guidance, the project would not cause a CO hotspot.

Fugitive Dust

Localized PM₁₀ would be generated by project construction activities, which would include earth-disturbing activities. The proposed project would comply with the SJVAPCD’s Regulation VIII dust control requirements during construction (including Rules 8011, 821, 8031, 8041, 8051, 8061, and 8071). Compliance with this regulation would reduce the potential for significant localized PM₁₀ impacts from fugitive dust to less than significant levels.

NO₂, SO₂, CO, PM₁₀ and PM_{2.5} Hotspots

The Offsite Utility Alignments consists of the construction of three sewer pipeline alignments. As discussed in Section 2, Project Description, changes to the existing wastewater processing facilities from anticipated expansion have been assessed under a separate environmental review under CEQA. The Offsite Utility Alignments would not result in a long-term increase or decrease construction equipment use, and would not result in any onsite operational emissions. The Offsite Utility Alignments would result in limited grading and trenching activities, consisting of the necessary construction activities to construct an assumed 4-foot by 4-foot trench. Furthermore, the Offsite Utility Alignments project is a linear construction scenario in which construction equipment would not be located at any one point of the utilities alignment for very long. Therefore, because of the limited scope, duration, equipment use, and the linear natures of the Offsite Utility Alignments, the potential to generate a NO₂, SO₂, CO, PM₁₀ and PM_{2.5} hotspot is less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Cumulatively Considerable Net Increase of Nonattainment Criteria Pollutants

Impact AIR-3:	The project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).

Impact Analysis

This impact assesses the potential for the proposed West Patterson Business Park Expansion Project's and Offsite Utility Alignments' potential to generate a cumulatively considerable net increase of criteria pollutants for which the Air Basin is in nonattainment. The Air Basin is in nonattainment for ozone, PM₁₀ and PM_{2.5}. Ozone is not directly emitted into the air, but is a secondary pollutant formed by the presence of ROG and NO_x in sunlight. Therefore, ROG and NO_x are termed 'ozone precursors'.

Thresholds of Significance

The SJVAPCD established significance thresholds for ozone precursors, ROG and NO_x, and has published them the GAMAQI. Operation-related emissions that exceed the threshold of 10 tons per year for ROG or NO_x, would be considered significant. The threshold for PM₁₀ is not identified in the GAMAQI; however, pursuant to direction provided by the SJVAPCD, 15 tons per year is used as a threshold for large projects such as the proposed West Patterson Business Park Expansion Project.

The GAMAQI does not have quantitative thresholds for construction emissions. Because the Air Basin is in nonattainment for PM_{2.5}, the threshold for PM_{2.5} for this project will be 10 tons per year. The justification for this number is that PM_{2.5} is in nonattainment and should have a more stringent threshold than PM₁₀ to provide a worst-case assessment. To present a worst-case evaluation, the annual thresholds are compared with the combined construction and operational emissions during the years where said emissions overlap.

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

- 10 tons per year ROG
- 10 tons per year NO_x
- 15 tons per year PM₁₀
- 10 tons per year PM_{2.5}

West Patterson Business Park Expansion Project

Construction Assumptions

Construction of the West Patterson Business Park Expansion Project would result in the generation of air pollutant emissions. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from onsite and offsite activities. Onsite emissions principally consist of exhaust emissions (NO_x, SO_x, CO, ROG, PM₁₀, and PM_{2.5}) from heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM₁₀) from disturbed soil. Additionally, paving operations and application of architectural coatings would release ROG emissions. Offsite emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM₁₀ and PM_{2.5}).

The construction emissions were estimated using URBEMIS. Note that specific details regarding construction, including the length of construction, the construction equipment list, and construction phase details were not available for incorporation into this assessment. The construction assumptions were developed using the phasing summary provided in Table 2-8 in Section 2, Project Description. As stated in Section 2, the proposed project would be expected to build out in multiple phases over a period of 20 to 30 years. However, a conservative or “worst-case” analysis of phasing is provided. Construction assumptions include:

- Demolition of the existing residence and related structures would occur in the first year of construction.
- For each phase, land uses would be constructed in equal amounts over the duration of phase construction.
- For each phase, grading activity would be equal in each year of phase construction.

- For each phase, stormwater basins would be constructed in equal amounts over the duration of phase construction
- All stormwater basins were assumed to be 8 feet deep (a more conservative depth than the project description's 7-foot depth).
- All soils excavated for stormwater basin construction would be balanced onsite within 0.25 mile of the soil source.
- URBEMIS default construction equipment and activity (including activity phase duration) based on the assumed annual land use, grading acreage, and excavation volumes were utilized.

An interim onsite wastewater treatment plant may be constructed as part of the project. However, the location, size, components, and duration of use are currently unknown. Emissions resulting from the construction of the potential wastewater treatment plant are assumed to be covered by the existing construction assumptions.

Operational Assumptions

Operational emissions from the West Patterson Business Park Expansion Project would be assumed to occur according to Table 2-8 in Section 2, Project Description. Therefore, operation of Phase 1 land uses would not begin until 2023, upon completion of Phase 1 construction. Emissions would be from the motor vehicles and trucks that would access the Project site and area sources (natural gas, painting, and landscaping).

According to the phasing assumptions, there would be overlap in emissions sources and phases; for example, Phase 2 construction would begin during the same year Phase 1 operations begin. Table 3.3-21 displays the overlap of construction and operation of the West Patterson Business Park Expansion Project's phases. Generally, mobile emissions from average fleet mix decrease over time, as new federal and state emissions regulations are enacted requiring higher levels of fuel economy or emissions reduction. Therefore, operational emissions were estimated at the start of each phase overlap; emissions were estimated at years 2023, 2028, 2031, and 2032. A modified average trip length of 35 miles was used based on potential destinations within the region. The average speed was increased to 45 miles per hour, rather than the URBEMIS default of 35 miles per hour, to account for trips on the adjacent highways. The vehicle and truck fleet, which was tailored to reflect the three major land uses, is the same as what was used in the Health Risk Assessment and the localized criteria hotspot assessment. The project-specific vehicle and truck fleet mix is provided in Table 3.3-9.

Because the URBEMIS model does not contain the mobile source emissions data for years 2023, 2028, 2031, or 2032, emissions for those years were interpolated using years 2020, 2025, 2030, and 2035 emissions modeling.

Table 3.3-21: Construction and Operation Overlap by Phase

Year	Activity by Phase			
	Phase 1	Phase 2	Phase 3	Phase 4
2013	Construction	—	—	—
2014	Construction	—	—	—
2015	Construction	—	—	—
2016	Construction	—	—	—
2017	Construction	—	—	—
2018	Construction	—	—	—
2019	Construction	—	—	—
2020	Construction	—	—	—
2021	Construction	—	—	—
2022	Construction	—	—	—
2023	Operation	Construction	—	—
2024	Operation	Construction	—	—
2025	Operation	Construction	—	—
2026	Operation	Construction	—	—
2027	Operation	Construction	—	—
2028	Operation	Operation	Construction	—
2029	Operation	Operation	Construction	—
2030	Operation	Operation	Construction	—
2031	Operation	Operation	Operation	Construction
2032	Operation	Operation	Operation	Operation

Source: Michael Brandman Associates, 2012.

Compliance with SJVAPCD Regulation VIII is assumed; the reductions for compliance with this regulation is demonstrated in URBEMIS as “mitigation” even though technically it is not mitigation. See Table 3.3-22 for Regulation VIII requirements and the corresponding ‘mitigation’ measure in URBEMIS.

Table 3.3-22: Compliance with Fugitive Dust Regulation VIII

Regulation VIII Control Measures	URBEMIS Reduction
All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.	Apply soil stabilizers to inactive areas
All onsite unpaved roads and offsite unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.	Manage haul road dust

Table 3.3-22 (cont.): Compliance with Fugitive Dust Regulation VIII

Regulation VIII Control Measures	URBEMIS Reduction
All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.	Water exposed surfaces two times per day
With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.	—
When materials are transported offsite, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.	Equipment loading/unloading
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. The use of blower devices is expressly forbidden.)	Manage haul road dust
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.	Water exposed surfaces two times per day, apply soil stabilizers to inactive areas
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.	Manage haul road dust
Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.	Manage haul road dust
Note: The Regulation VIII Control Measures are from San Joaquin Valley Air Pollution Control District, 2002. The URBEMIS reduction is from the modeling data provided in Appendix C. Source: Michael Brandman Associates, 2012.	

Emissions

Air pollutant emissions for the years of analysis are shown in Table 3.3-23, Table 3.3-24, Table 3.3-25, Table 3.3-26, and Table 3.3-27. As shown in Table 3.3-23, construction of Phase 1 would not exceed the SJVAPCD's thresholds of significance. As shown in Table 3.3-24, Table 3.3-25, Table 3.3-26, and Table 3.3-27, emissions of ozone precursor pollutants (ROG and NO_x) and particulate matter (PM₁₀ and PM_{2.5}) are significant.

Table 3.3-23: Project Emissions 2013

Source	Emissions (tons)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
PHASE 1 CONSTRUCTION				
Building Demolition	0.03	0.29	0.22	0.06
Fine Site Grading	0.05	0.43	0.22	0.06
Paving	0.03	0.10	0.01	0.01
Building Construction	0.50	3.39	0.20	0.16

Table 3.3-23 (cont.): Project Emissions 2013

Source	Emissions (tons)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Architectural Coatings	6.36	0.00	0.00	0.00
Stormwater Detention Basin	0.03	0.25	0.24	0.06
Total Annual Emissions	7.00	4.47	0.89	0.34
SJVAPCD Threshold	10	10	15	15
Significant?	No	No	No	No
Note: Totals based on non-rounded emissions. Source: Michael Brandman Associates, 2011.				

Table 3.3-24: Project Emissions 2023

Source	Emissions (tons)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
PHASE 1 OPERATION				
<i>Shopping Center</i>				
Area Sources	0.14	0.19	0.00	0.00
Mobile Sources	2.70	3.29	10.61	2.16
<i>Light Industrial</i>				
Area Sources	0.51	0.15	0.00	0.00
Mobile Sources	3.77	18.52	14.61	3.34
<i>Business Park</i>				
Area Sources	0.05	0.15	0	0
Mobile Sources	0.36	3.24	1.09	0.31
<i>Subtotal Area Sources</i>	<i>0.70</i>	<i>0.49</i>	<i>0.00</i>	<i>0.00</i>
<i>Subtotal Mobile Sources</i>	<i>6.83</i>	<i>25.05</i>	<i>26.31</i>	<i>5.81</i>
Total Phase 1 Emissions	7.53	25.54	26.31	5.81
PHASE 2 CONSTRUCTION				
Fine Site Grading	0.03	0.23	0.23	0.05
Paving	0.02	0.05	0.00	0.00
Building Construction	0.26	1.62	0.13	0.09
Architectural Coatings	7.35	0.00	0.00	0.00
Stormwater Detention Basin	0.02	0.12	0.13	0.03
Total Phase 2 Emissions	7.69	2.03	0.49	0.18

Table 3.3-24 (cont.): Project Emissions 2023

Source	Emissions (tons)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Total Annual Emissions	15.22	27.57	26.80	5.99
SJVAPCD Threshold	10	10	15	15
Significant?	Yes	Yes	Yes	Yes
Note: Totals based on non-rounded emissions. Source: Michael Brandman Associates, 2012.				

Table 3.3-25: Project Emissions 2028

Source	Emissions (tons)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
PHASE 1 OPERATION				
<i>Shopping Center</i>				
Area Sources	0.14	0.19	0.00	0.00
Mobile Sources	2.10	2.34	10.60	2.15
<i>Light Industrial</i>				
Area Sources	0.51	0.15	0.00	0.00
Mobile Sources	2.97	13.19	14.49	3.23
<i>Business Park</i>				
Area Sources	0.05	0.15	0.00	0.00
Mobile Sources	0.29	2.34	1.06	0.28
<i>Subtotal Area Sources</i>	<i>0.70</i>	<i>0.49</i>	<i>0.00</i>	<i>0.00</i>
<i>Subtotal Mobile Sources</i>	<i>5.36</i>	<i>17.87</i>	<i>26.15</i>	<i>5.66</i>
Total Phase 1 Emissions	6.06	18.36	26.15	5.66
PHASE 2 OPERATION				
<i>Light Industrial</i>				
<i>Area Sources</i>	<i>0.79</i>	<i>0.15</i>	<i>0.00</i>	<i>0.00</i>
<i>Mobile Sources</i>	<i>4.71</i>	<i>20.92</i>	<i>22.97</i>	<i>5.12</i>
Total Phase 2 Emissions	5.50	21.07	22.97	5.12

Table 3.3-25 (cont.): Project Emissions 2028

Source	Emissions (tons)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
PHASE 3 CONSTRUCTION				
Fine Site Grading	0.04	0.29	0.38	0.09
Paving	0.03	0.06	0.00	0.00
Building Construction	0.30	1.90	0.18	0.12
Architectural Coatings	11.35	0.00	0.00	0.00
Stormwater Detention Basin	0.02	0.12	0.12	0.03
Total Phase 3 Emissions	11.74	2.36	0.69	0.24
Total Annual Emissions	23.30	41.79	49.81	11.02
SJVAPCD Threshold	10	10	15	15
Significant?	Yes	Yes	Yes	Yes
Note: Totals based on non-rounded emissions. Source: Michael Brandman Associates, 2012.				

Table 3.3-26: Project Emissions 2031

Source	Emissions (tons)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
PHASE 1 OPERATION				
<i>Shopping Center</i>				
Area Sources	0.14	0.19	0.00	0.00
Mobile Sources	1.84	1.98	10.60	2.15
<i>Light Industrial</i>				
Area Sources	0.51	0.15	0.00	0.00
Mobile Sources	2.65	11.58	14.45	3.20
<i>Business Park</i>				
Area Sources	0.05	0.15	0.00	0.00
Mobile Sources	0.27	2.10	1.06	0.27
<i>Subtotal Area Sources</i>	<i>0.70</i>	<i>0.49</i>	<i>0.00</i>	<i>0.00</i>
<i>Subtotal Mobile Sources</i>	<i>4.76</i>	<i>15.66</i>	<i>26.11</i>	<i>5.62</i>
PHASE 3 OPERATION				
<i>Shopping Center</i>				
Area Sources	0.13	0.18	0.00	0.00

Table 3.3-26 (cont.): Project Emissions 2031

Source	Emissions (tons)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Mobile Sources	2.66	2.90	15.48	3.14
Light Industrial				
Area Sources	1.05	0.15	0.00	0.00
Mobile Sources	5.63	24.56	30.66	6.78
Business Park				
Area Sources	0.07	0.15	0.00	0.00
Mobile Sources	0.41	3.19	1.61	0.42
Subtotal Area Sources	1.25	0.48	0.00	0.00
Subtotal Mobile Sources	8.70	30.65	47.75	10.34
Total Phase 3 Emissions	9.95	31.13	47.75	10.34
PHASE 4 CONSTRUCTION				
Fine Site Grading	0.04	0.29	0.42	0.10
Paving	0.03	0.06	0.00	0.00
Building Construction	0.23	1.45	0.12	0.08
Architectural Coatings	6.03	0.00	0.00	0.00
Stormwater Detention Basin	0.02	0.12	0.03	0.01
Total Phase 4 Emissions	6.35	1.91	0.57	0.19
Total Annual Emissions	26.76	67.70	97.34	21.21
SJVAPCD Threshold	10	10	15	15
Significant?	Yes	Yes	Yes	Yes
Note: Totals based on non-rounded emissions. Source: Michael Brandman Associates, 2012.				

Table 3.3-27: Project Emissions 2032

Source	Emissions (tons)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
PHASE 1 OPERATION				
Shopping Center				
Area Sources	0.14	0.19	0.00	0.00
Mobile Sources	1.77	1.91	10.60	2.15

Table 3.3-27 (cont.): Project Emissions 2032

Source	Emissions (tons)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
<i>Light Industrial</i>				
Area Sources	0.51	0.15	0.00	0.00
Mobile Sources	2.57	11.31	14.45	3.19
<i>Business Park</i>				
Area Sources	0.05	0.15	0.00	0.00
Mobile Sources	0.26	2.06	1.06	0.27
<i>Subtotal Area Sources</i>	<i>0.70</i>	<i>0.49</i>	<i>0.00</i>	<i>0.00</i>
<i>Subtotal Mobile Sources</i>	<i>4.60</i>	<i>15.28</i>	<i>26.11</i>	<i>5.61</i>
Total Phase 1 Emissions	5.30	15.77	26.11	5.61
PHASE 2 OPERATION				
<i>Light Industrial</i>				
Area Sources	0.79	0.15	0.00	0.00
Mobile Sources	4.08	17.93	22.90	5.06
Total Phase 2 Emissions	4.87	18.08	22.90	5.06
PHASE 3 OPERATION				
<i>Shopping Center</i>				
Area Sources	0.13	0.18	0.00	0.00
Mobile Sources	2.56	2.79	15.48	3.14
<i>Light Industrial</i>				
Area Sources	1.05	0.15	0.00	0.00
Mobile Sources	5.46	23.99	30.65	6.77
<i>Business Park</i>				
Area Sources	0.07	0.15	0.00	0.00
Mobile Sources	0.40	3.13	1.61	0.42
<i>Subtotal Area Sources</i>	<i>1.25</i>	<i>0.48</i>	<i>0.00</i>	<i>0.00</i>
<i>Subtotal Mobile Sources</i>	<i>8.42</i>	<i>29.91</i>	<i>47.74</i>	<i>10.33</i>
Total Phase 3 Emissions	9.67	30.39	47.74	10.33
PHASE 4 OPERATION				
<i>Business Park</i>				
Area Sources	0.65	0.15	0.00	0.00
Mobile Sources	5.08	39.77	20.37	5.25

Table 3.3-27 (cont.): Project Emissions 2032

Source	Emissions (tons)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Total Phase 4 Emissions	5.73	39.92	20.37	5.25
Total Annual Emissions	25.57	104.16	117.12	26.25
SJVAPCD Threshold	10	10	15	15
Significant?	Yes	Yes	Yes	Yes
Note: Totals based on non-rounded emissions. Source: Michael Brandman Associates, 2012.				

Combined construction and operational emissions would exceed SJVAPCD thresholds between years 2023 and 2032. Mobile sources are the greatest contributor of project-related emissions, accounting for approximately 95 percent of total ROG emissions and 98 percent of total NO_x emissions at project buildout.

Rule 9510 Compliance

Compliance with SJVAPCD Rule 9510 would reduce emissions throughout project construction and operation. As stated above, Rule 9510 would reduce construction exhaust emissions of NO_x and PM₁₀, as well as operational NO_x and PM₁₀. For operational emission, Rule 9510 would result in a reduction of construction exhaust NO_x and PM₁₀, as well as operational NO_x and PM₁₀.

Rule 9510-required operational emission reductions are calculated from project's emissions at buildout year and the emissions projection over the 10 years following buildout. However, the reductions essentially halve a project's buildout year NO_x and PM₁₀ emissions. Emission reductions of operational ROG and PM_{2.5} are expected as well, as the main sources of are substantially the same as for NO_x and PM₁₀. However, the exact amount of ROG and PM_{2.5} emission reductions cannot be calculated with certainty. For the purposes of analysis, it is assumed that ROG and PM_{2.5} emission reductions would be the same as NO_x and ROG. Rule 9510 compliance would substantially reduce the project's emissions. However, project-generated emissions would remain significant after implementation of Rule 9510 required emission reductions.

Mitigation Measure AIR-3a requires compliance with Rule 9510, including its emissions reduction objectives for criteria pollutants such as NO_x and PM₁₀ emissions.

Offsite Utility Alignments

Similar to construction of the West Patterson Business Park Expansion Project, construction of the Offsite Utility Alignments would result in construction emissions from onsite and offsite activities. Onsite emissions principally consist of exhaust emissions (NO_x, SO_x, CO, ROG, PM₁₀, and PM_{2.5}) from trenching equipment, motor vehicle operation, and fugitive dust (mainly PM₁₀) from disturbed

soil. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions.

The construction assumptions were developed using the alignments summary provided in Table 2-6 in Section 2, Project Description. However, the construction phasing and duration of the Offsite Utility Alignments is currently unknown. Therefore, it was assumed that the Offsite Utility Alignments would be constructed in 2013. The URBEMIS fine site grading phase was utilized to estimate trenching emissions to provide a conservative “worst case” scenario because the fine site grading phase off-road fugitive dust, off-road construction exhaust, on-road vehicle exhaust and worker trip emissions. The URBEMIS trenching phase does not include off-road fugitive dust or on-road vehicle exhaust. Construction assumptions include:

- Trenches would be constructed approximately 4 feet wide and 4 feet deep.
- Alignment 1 would require pavement removal and repaving of roadways.
- Approximately one-third of excavated soils on Alignment 1 would be transported offsite, to a location within 1 mile of the alignment.
- Alignment 2 and 3 would not require pavement removal or paving activity.

Emissions

Air pollutant emissions for the construction of the Offsite Utility Alignments are shown in Table 3.3-28. As shown in the table, construction emissions would not exceed the SJVAPCD’s thresholds of significance. Therefore, construction of the Offsite Utility Alignments would be less than significant.

Table 3.3-28: Offsite Utility Alignments Construction Emissions

Source	Emissions (tons)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Alignment 1				
Trenching	0.04	0.32	0.02	0.02
Paving	0.01	0.06	0.00	0.00
Alignment 2				
Trenching	0.04	0.32	0.02	0.02
Trenching	0.04	0.32	0.08	0.03
Total Offsite Utility Alignments Emissions	0.13	1.02	0.13	0.06
Alignment 3				
SJVAPCD Threshold	10	10	15	15
Individual Phases Significant?	No	No	No	No

Table 3.3-28 (cont.): Offsite Utility Alignments Construction Emissions

Source	Emissions (tons)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Note: Totals based on non-rounded emissions. Source: Michael Brandman Associates, 2012.				

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-3a Prior to issuance of building permits for each use, the project applicant shall demonstrate compliance with all applicable requirements of San Joaquin Valley Air Pollution Control District, Rule 9510 via the submittal of a Rule 9510 Implementation Plan to the City of Patterson for review and approval. The implementation plan shall achieve a 33-percent reduction in NO_x and a 45-percent reduction in PM₁₀ over the first 10 years of operations through the use of onsite emissions reduction measures or through the payment of offsite mitigation fees to the SJVAPCD for purchase of emission reductions. The requirements of the approved implementation plan shall be incorporated into the proposed project..

MM AIR-3b Prior to issuance of building permits for any use that would receive 10 or more truck deliveries per week, the project applicant shall demonstrate that the following anti-idling measures would be implemented:

- Provide available electricity hookups for trucks in the loading dock areas.
- Signs shall be posted in dock areas advising drivers of the maximum allowable idling time in accordance with California Air Resources Board regulations.
- Telephone numbers of the building facilities manager and the California Air Resources Board shall be posted on signs at truck entrances to report idling violations.

Level of Significance After Mitigation

Significant unavoidable impact.

Sensitive Receptors

Impact AIR-4: The project would not expose sensitive receptors to substantial air pollutant concentrations.

Impact Analysis

This impact will assess the potential for the proposed West Patterson Business Park Expansion Project and Offsite Utility Alignments' potential to expose sensitive receptors to substantial

concentrations of asbestos, localized NO₂, SO₂, PM₁₀, PM_{2.5}, carbon monoxide, diesel particulate matter or other hazardous pollutants, or valley fever, as discussed below.

West Patterson Business Park Expansion Project

Asbestos

Asbestos is a fibrous mineral which is both naturally occurring in ultramafic rock (a rock type commonly found in California), and used as a processed component of building materials. Because asbestos has been proven to cause a number of disabling and fatal diseases, such as asbestosis and lung cancer, it is strictly regulated in its use as a building material.

As discussed in the Environmental Setting, the nearest location of naturally occurring asbestos is approximately 6.5 miles west of the project boundary. The project site is sufficiently far enough away from the nearest area likely to contain naturally occurring asbestos; therefore, the project's potential to generate a naturally occurring asbestos exposure impact is less than significant.

The proposed project would involve demolition of existing structures that predate the federal ban on the use of asbestos-containing materials. Therefore, the proposed project is required to comply with SJVAPCD Rule 4002 (National Emissions Standards for Hazardous Air Pollutants) and Rule 3050 (Asbestos Removal Fees). Rule 3050 is applicable to all demolitions whether or not asbestos is present. Compliance with SJVAPCD regulations regarding asbestos removal is typically included in the demolition permit conditions. As such, prior to issuance of demolition permits, the project applicant will be required to submit a Demolition Permit Release form to the SJVAPCD. The purpose of the form is to verify compliance with or exemption from the National Emission Standards for Hazardous Air Pollutants (NESHAP) asbestos notification requirements. It is the project applicant's responsibility to obtain the required signature from the SJVAPCD and return this form to the appropriate city or county building department prior to obtaining a demolition permit.

NESHAP requires that a thorough inspection for asbestos be conducted before any regulated facility is demolished or renovated. An asbestos survey is required prior to demolition. Inspections must include the collection and microscopic analysis of samples of all materials that might contain asbestos. Consultants who perform inspections must be certified by Cal-OSHA and provide a written report containing the inspection results. If asbestos containing materials are present, the applicant must follow the SJVAPCD requirements and, potentially, California Occupational Safety and Health Administration and Cal-EPA regulations. Compliance with these regulations reduces the potential for exposure to asbestos containing material to less than significant.

CO Hotspot

The project's potential to violate the state or federal CO ambient air quality standards was evaluated in Impact AIR-2, above. As found in Impact AIR-2, the project would not violate the CO standards. Therefore, the project would not expose sensitive receptors to substantial CO concentrations, and CO hotspot impacts would be less than significant.

NO₂, SO₂, CO, PM₁₀ and PM_{2.5} Hotspots

The project's potential to violate the NO₂, SO₂, CO PM₁₀ and PM_{2.5} air quality standards was evaluated in Impact AIR-2, above. As found in Impact AIR-2, the project would not result in significant localized NO₂, SO₂, CO, PM₁₀, or PM_{2.5} impacts.

*Diesel Particulate Matter and Toxic Air Contaminants***Construction**

The SJVAPCD currently does not provide screening criteria or recommendations for quantifying construction-related DPM or toxic air contaminants (TACs). However, health-related risks associated with diesel exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. The estimation of cancer risks associated with exposure to toxic air contaminants is typically calculated based on a 70-year period of exposure. The use of diesel-powered construction equipment for the West Patterson Business Park Expansion, however, would occur during short, discrete episodes over a 20- to 30-year period and would occur within a relatively large area. For this reason, diesel exhaust generated by construction, in and of itself, would not be expected to create conditions where the probability of contracting cancer over a 70-year lifetime of exposure is greater than 10 in 1 million for nearby receptors.

Operation

Diesel particulate matter (DPM) is a carcinogenic toxic air contaminant that would be emitted from the delivery trucks that would visit the project site during project operations. As discussed in Pollutants of Concern, DPM is a toxic air contaminant. Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects.

The predominant sources of toxic air contaminant emissions from this project are associated with the DPM emitted from the delivery truck traffic that will service the project. Similarly, DPM emissions result from delivery truck exhaust during travel on the project site as well as from the idling of the trucks as they unload/load their contents at the various loading docks.

A health risk assessment was prepared to assess potential health risks from operational DPM (see Appendix C). The health risk assessment explains the details and assumptions used in estimating the potential health risks. A health risk assessment requires the completion and interaction of four general steps:

1. Quantify project-generated toxic air contaminant emissions.
2. Identify nearby ground-level receptor locations that may be affected by the emissions (including any special sensitive receptor locations such as residences, schools, hospitals, convalescent homes, and day care centers).

3. An air dispersion modeling analyses (using the EPA model AERMOD) was applied to estimate the ambient pollutant concentrations at each receptor location using the project's toxic air contaminant emissions and representative meteorological data to define the transport and dispersion of the those emissions in the atmosphere.
4. Characterize and compare the calculated health risk with the significance thresholds.

There are substantial uncertainties involved in assessing the health risk of air pollutants. There are uncertainties in dispersion modeling, toxicological factors, and exposure assessment. The methodology described above for assessing health risks involving emission estimations, dispersion modeling, and toxicity risk factors have been developed to provide conservative results (in terms of over-predicting impacts).

The OEHHA (2003) recommends using the 70-year exposure duration for determining residential cancer risks. Although it is unlikely that people will reside at a single residence for 70 years, it is common that people will spend their entire lives in a major urban area. While residing in urban areas, it is very possible to be exposed to the emissions of other facilities. In order to help ensure that people do not accumulate an excess unacceptable cancer risk from cumulative exposure to stationary facilities at multiple residences, OEHHA recommends the 70-year exposure duration for risk management decisions. However, it is important to note that a person who has resided in his or her current residence for fewer than 70 years will have a cancer risk less than what is calculated for a 70-year risk. Nonetheless, this assessment attempts to be conservative and provide a worst-case scenario for exposure.

Further, the factors used to calculate emissions reference particular fleet years: 2023, 2028, 2031, and 2032. However, emission projections using the ARB EMFAC mobile source emission model indicate that mobile source diesel emission factors will decline substantially over the next 30 years, particularly for the heavy heavy-duty truck vehicles. This is due to the replacement of older trucks fleets with newer and much cleaner trucks and the addition emission controls added to the existing fleet of trucks. This movement to cleaner trucks and reduced truck emissions is the result of the truck emission requirements adopted by the ARB. Therefore, the cancer risks estimated in this assessment provide conservative results in terms of over-estimating potential impacts from the operation of the proposed project.

Finally, the guidance from the SJVAPCD in estimating cancer risk assumes a daily breathing rate that is at the 95th percentile of the rate estimates. On the other hand, the ARB recommends the use of the 80th percentile daily breathing rate. This difference results in a further increase in estimated cancer risk of roughly 30 percent by using the SJVAPCD daily breathing rate compared to the ARB recommendation.

Cancer Impacts

The cancer health risks from the four project buildout years for the West Patterson Business Park Expansion project are shown in Table 3.3-29. As shown in the table, the estimated cancer risks would not exceed the significance thresholds. This impact is less than significant.

Table 3.3-29: Summary of Cancer Risks at Sensitive Receptors

West Patterson Business Park Expansion Project					
Project Year	Location	DPM Concentration ($\mu\text{g}/\text{m}^3$)	Cancer Risk (risk per million)	Significance Threshold (risk per million)	Exceeds Threshold?
2023 Phase 1	Maximum Exposed Residential Receptor ⁽¹⁾	0.0152	6.3	10	No
2028 Phases 1,2	Maximum Exposed Residential Receptor ⁽¹⁾	0.0171	7.1	10	No
2031 Phases 1,2,3	Maximum Exposed Residential Receptor ⁽¹⁾	0.0224	9.3	10	No
2032 Phases 1,2,3,4	Maximum Exposed Residential Receptor ⁽¹⁾	0.0220	9.1	10	No
Note: ⁽¹⁾ The location of the maximum exposed residential cancer risk occurs at the caretaker residence for the Kit Fox RV Park located 344 meters south of the project site Source: Michael Brandman Associates, 2012.					

As shown in Table 3.3-29, the excess cancer risks associated with the operation of the project would not exceed the cancer risk significance level of 10 in a million at nearby existing sensitive receptors either after commencement of operation Phase 1 or at buildout, in 2035.

Non-Cancer Impacts

The highest chronic non-cancer Hazard Index for 2035 was calculated to be 0.004, which is also less than the significance threshold of 1.

Valley Fever

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

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

Construction activities are anticipated to generate fugitive dust. The project will minimize the generation of fugitive dust during construction activities by complying with the SJVAPCD's Regulation VIII. As discussed in Impact AIR-2, compliance with the SJVAPCD's Regulation VIII will reduce potential impacts to air quality from fugitive dust generated during construction to less than significant.

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

Offsite Utility Alignments

Asbestos

As discussed in the Environmental Setting, the nearest location of naturally occurring asbestos is approximately 6.5 miles west of the project boundary. The Offsite Utility Alignments are sufficiently distanced from the nearest area likely to contain naturally occurring asbestos; therefore, the Offsite Utility Alignments' potential to generate a naturally occurring asbestos exposure impact is less than significant.

The Offsite Utility Alignments would not involve demolition of structures that would the potential to have asbestos containing materials. Therefore, the Offsite Utility Alignments' potential to generate a naturally occurring asbestos exposure impact is less than significant.

CO Hotspot

The project's potential to violate the state or federal CO ambient air quality standards was evaluated in Impact AIR-2, above. As found in Impact AIR-2, the project would not violate the CO standards. Therefore, the project would not expose sensitive receptors to substantial CO concentrations, and CO hotspot impacts would be less than significant.

NO₂, SO₂, PM₁₀ and PM_{2.5} Hotspots

The project's potential to create a NO₂, SO₂, PM₁₀ or PM_{2.5} hotspot was evaluated in Impact AIR-2, above. As found in Impact AIR-2, the project would not generate a NO₂, SO₂, PM₁₀ or PM_{2.5} hotspot. Therefore, the project would not expose sensitive receptors to substantial NO₂, SO₂, PM₁₀, or PM_{2.5} concentrations, and impacts would be less than significant.

Diesel Particulate Matter and Toxic Air Contaminants

The SJVAPCD currently does not provide screening criteria or recommendations for quantifying construction-related DPM or TACs. However, health-related risks associated with diesel exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. The estimation of cancer risks associated with exposure to toxic air contaminants is typically calculated based on a 70-year period of exposure.

The proposed Offsite Utility Alignments would involve three utility alignments of 0.23 acre, 0.31 acre, and 0.69 acre of construction area. In addition, the project is a linear construction scenario in which construction equipment would not be located at any one point of the project alignment for very long. Total construction duration of the Offsite Utility Alignments is estimated to be 2 months. Since the use of construction equipment (1) would be temporary and would not occur close to the 70-year timeframe, and (2) would not occur in a single location but would be spread out geographically (exposure of sensitive receptors to TACs would not be substantial), emissions of DPM would not be substantial enough to be considered a significant health risk.

Therefore, health risks from Offsite Utility Alignment construction-related DPM would be less than significant.

Valley Fever

As stated above, Valley Fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis*.

Offsite Utility Alignments construction activities are anticipated to generate fugitive dust. The project will minimize the generation of fugitive dust during construction activities by complying with the SJVAPCD's Regulation VIII. As discussed in Impact AIR-2, compliance with the SJVAPCD's Regulation VIII will reduce potential impacts to air quality from fugitive dust generated during construction to less than significant.

The Offsite Utility Alignments would not result in operational activity; this condition would preclude the possibility of the Offsite Utility Alignments from generating fugitive dust that may contribute to Valley Fever exposure. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Objectionable Odors

Impact AIR-5:	The proposed project would not create objectionable odors affecting a substantial number of people.

Impact Analysis

This impact will assess the West Patterson Business Park Expansion Project and Offsite Utility Alignments' potential to expose a substantial number of people to objectionable odors.

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SJVAPCD. Any project with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact. Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc., warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas.

Two situations create a potential for odor impact. The first occurs when a new odor source is located near an existing sensitive receptor. The second occurs when a new sensitive receptor locates near an existing source of odor. SJVAPCD has determined the common land use types that are known to produce odors in the Air Basin. Included in the types of land uses that are known to create odors are wastewater treatment facilities, chemical manufacturing plants, painting/coating operations, feed lots/dairies, composting facilities, landfills, and transfer stations.

According to the GAMAQI, analysis of potential odor impacts should be conducted for the following two situations:

- **Generators** – Projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate, and
- **Receivers** – Residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources.

The analysis would involve contacting the SJVAPCD's Compliance Division for information regarding odor complaints. For a project locating near an existing source of odors, the project should be identified as having a significant odor impact if it is proposed for a site that is closer to an existing odor source than any location where there have been:

- More than one confirmed complaint per year averaged over a three-year period, or
- Three unconfirmed complaints per year averaged over a three-year period.

Background Information

Individual responses to odors are highly variable and can result in a variety of effects. Generally, the impact of an odor results from a variety of factors such as frequency, duration, offensiveness, location, and sensory perception. The frequency is a measure of how often an individual is exposed to an odor in the ambient environment. The intensity refers to an individual's or group's perception of the odor strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected

person lives, works, or visits; the type of activity in which he or she is engaged; and the sensitivity of the impacted receptor.

Sensory perception has four major components: detectability, intensity, character, and hedonic tone. The detection (or threshold) of an odor is based on a panel of responses to the odor. There are two types of thresholds: the odor detection threshold and the recognition threshold. The detection threshold is the lowest concentration of an odor that will elicit a response in a percentage of the population, typically presented as the mean (or 50 percent of the population) but sometimes indicated as 100 percent or 10 percent. The recognition threshold is the minimum concentration that is recognized as having a characteristic odor quality by x percent (usually 50 percent) of the population. The intensity refers to the perceived strength of the odor. The odor character is what the substance smells like. The hedonic tone is a judgment of the pleasantness or unpleasantness of the odor. The hedonic tone varies in subjective experience, frequency, odor character, odor intensity, and duration.

West Patterson Business Park Expansion Project

During construction, the various diesel-powered vehicles and equipment in use onsite would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the project's site boundaries. The potential for diesel odor impacts is therefore less than significant.

The proposed project may include a privately owned and operated onsite wastewater treatment plant. The onsite wastewater treatment plant, also known as a "package plant," may be used for one or more phases of the project. If a package plant were installed, the untreated effluent would be pumped to a treatment plant on a 5.45-acre site near the Delta-Mendota Canal and the future East-West Internal roadway within the Arambel Business Park portion of the project site (Exhibit 2-12b). The package plant would be a prefabricated, packaged wastewater treatment plant with related equipment designed and constructed to comply with Title 22 requirements for use as non-potable irrigation water. The package plant would have a maximum capacity of 0.7 million gallons per day, which would be sufficient to serve the entire project. Details of the package plant are provided in Section 2, Project Description of this Draft EIR.

Although the package plant alternative is located in the interior of the proposed project, it would be adjacent to proposed industrial uses. Therefore, the proposed project may have the potential to expose persons to substantial sources of objectionable odors. As such, Mitigation Measure AIR-5 requires the project applicant to develop a plan outlining Odor Control Best Management Practices to prevent or minimize the release of objectionable odors during plant operations. With the implementation of mitigation, impacts would be reduced to a level of less than significant.

Offsite Utility Alignments

During construction, the various diesel-powered vehicles and equipment in use onsite would create localized odors. These odors would be temporary and would not likely be noticeable for extended

periods of time beyond the project's site boundaries. The potential for diesel odor impacts is therefore less than significant.

Sewer pipelines are potential sources of odors; however, these lines would be buried underground, which limits the potential for odors to be observed. Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant.

Mitigation Measures

MM AIR-5 Prior to commencement of onsite wastewater treatment plant operations, the project applicant shall prepare and submit a plan outlining Odor Control Best Management Practices to the City of Patterson and the San Joaquin Valley Air Pollution Control District for review and approval. The plan shall identify measures and practices that would prevent or minimize the release of objectionable odors from plant operations. The approved plan shall be incorporated into the proposed project.

Level of Significance After Mitigation

Less than significant impact.

Greenhouse Gas Emissions

Impact AIR-6: The proposed project would not emit significant amounts of greenhouse gases or conflict with an applicable plan, policy, or regulation concerning greenhouse gas reduction.

Impact Analysis

This impact will assess the West Patterson Business Park Expansion Project and Offsite Utility Alignments' potential to generate greenhouse gas emissions that may have a significant impact on the environment and potential to conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Thresholds of Significance

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

- It was exempt from the requirements of CEQA, or
- Comply with an approved greenhouse gas emission reduction plan or greenhouse gas mitigation program that avoids or substantially reduces greenhouse gas emissions within the geographic area in which the project is located. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency, or

- Implement approved best performance standards, or
- Quantify project greenhouse gas emissions and reduce those emissions by at least 29 percent compared to business as usual. “Business as usual” is referenced in ARB’s AB 32 Scoping Plan as emissions occurring in 2020 if the average baseline emissions during the 2002–2004 period grew to 2020 levels, without control. Therefore, 2002–2004 emissions factors, on a unit of activity basis, multiplied by the activity expected to occur in 2020, is an appropriate representation of 2020 business as usual. The reductions can be based on any combination of reduction measures, including greenhouse gas reductions achieved as a result of changes in building and appliance standards occurring since the 2002–2004 baseline period.

West Patterson Business Park Expansion Project

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

Construction Emissions Inventory

During construction activities, greenhouse gases would be emitted from construction equipment, vehicle, and truck exhaust. Construction emissions were estimated using URBEMIS2007 as described in Impact AIR-3. Construction emissions are presented in Table 3.3-30. The SJVAPCD does not have thresholds or guidance regarding the significance of construction related emissions. However, that does not mean a significance finding should not be identified. AB 32 requires that emissions within the State be reduced to 1990 levels by the year 2020. However, it could be possible that there could be some construction in 2020 or later. These construction emissions are few and would be limited in duration and, therefore, are anticipated to be less than significant.

Table 3.3-30: West Patterson Business Park Expansion Project Construction Greenhouse Gas Emissions

Years (Duration)	Construction Activity	Carbon Dioxide Emissions (tons)		Metric Tons of Carbon Dioxide Equivalent (MTCO ₂ e)
		Annual Emissions	Total Emissions by Activity	
2013–2022 (10 Year)	Demolition*	44.66	44.66	41
	Fine Site Grading	48.60	486.00	441
	Paving	12.90	129.00	117
	Building	1,071.95	1,0719.50	9,725
	Stormwater Basin Excavating and Grading*	29.52	29.52	27
	Coating	7.60	76.00	69

Table 3.3-30 (cont.): West Patterson Business Park Expansion Project Construction Greenhouse Gas Emissions

Years (Duration)	Construction Activity	Carbon Dioxide Emissions (tons)		Metric Tons of Carbon Dioxide Equivalent (MTCO ₂ e)
		Annual Emissions	Total Emissions by Activity	
2023–2027 (5 years)	Fine Site Grading	47.04	235.20	213
	Paving	12.62	63.10	57
	Building	1,425.21	7,126.05	6,465
	Stormwater Basin Excavating and Grading*	24.85	24.85	23
	Coating	8.80	44.00	40
2028–2030 (3 years)	Fine Site Grading	8.80	44.00	40
	Paving	62.15	186.45	169
	Building	16.57	49.71	45
	Stormwater Basin Excavating and Grading*	2,050.66	6,151.98	5,581
	Coating	750.14	750.14	681
2031–2031 (1 year)	Fine Site Grading	62.15	62.15	56
	Paving	17.55	17.55	16
	Building	1,235.59	1,235.59	1121
	Stormwater Basin Excavating and Grading	24.91	24.91	23
	Coating	7.22	7.22	7
Total		—	27,504.35	24,951.95
Notes: * Demolition and Stormwater Basin Excavating and Grading phases assumed to be completed within one year of start of construction. MTCO ₂ e = metric tons of carbon dioxide equivalents, converted from tons by multiplying by the global warming potential of carbon dioxide (1) and 0.9072. Waste emissions were generated using the EPA WARM model. Source: Michael Brandman Associates, 2012.				

Operational Emissions Inventory

Greenhouse gas emissions from operation of the project are shown in Table 3.3-31. As shown, the largest source of emissions is from motor vehicles and trucks that would access the project site, contributing approximately 86 percent of the emissions. The emissions presented are “business as usual” emissions, which refer to emissions that do not account for reductions attributable to regulations that occurred after 2004, project design features, or mitigation measures.

Table 3.3-31: West Patterson Business Park Expansion Project Operational Greenhouse Gas Emissions (Buildout)

Source	Business as Usual Emissions (MTCO ₂ e per year)
Motor vehicles	664,288
Natural gas	4,055
Indirect electricity	61,475
Water transport	1,967
Waste	4,889
Refrigerants	29,632
Total	766,306
Note: MTCO ₂ e = metric tons of carbon dioxide equivalents Source: Michael Brandman Associates, 2012.	

Motor vehicles: The carbon dioxide emissions were estimated using URBEMIS2007 as discussed in Impact AIR-3. The emissions represent the emissions that would occur within the State of California. An addition of 5 percent was added to the carbon dioxide emissions to account for methane, nitrous oxide, and hydrofluorocarbons (from leaking air conditioning units in vehicles). The trip generation rates for the West Patterson Business Park Expansion are from the ITE Generation rates and do not reflect reductions attributable to internalization between the land uses within the West Patterson Business Park Expansion. As stated in the Traffic Study, the City of Patterson has seen steady population growth, primarily attributable to workers who live in Patterson and work in the San Francisco-San Jose-Tri-Valley areas and secondarily in the Modesto area. Therefore, it is anticipated that the project may reduce trip lengths from existing work-related commutes. Therefore, the emissions analysis is overly conservative, as it does not account for internal trip capture or reduction in existing trip lengths.

Natural Gas: Natural gas emissions refer to the emissions that occur when natural gas is burned on the project site. Natural gas may be used on the project for heating water, space heating, or other uses. Carbon dioxide emissions were estimated using URBEMIS. Methane and nitrous oxide emissions were estimated using the procedures outlined in Appendix C.

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

Water Transport: There would be greenhouse gas emissions generated from the electricity required to transport and treat the water to be used on the project site. The project's water demand is estimated to be 1,405 acre-feet per year. Refer to Appendix C for details

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

Refrigerants: There can be leakages of refrigerants (hydrofluorocarbons) from air conditioners and refrigerators. An average global warming potential of 2,065 for refrigerators and 1,513 for air conditioning is assumed.

Mitigation Measures in Other Impact Areas that would Reduce Emissions

Mitigation measures in other impact areas that would reduce greenhouse gas emissions are as follows:

- Mitigation Measure PSU-3 requires water conservation features. A reduction of 5 percent (reflective of the conservation features) is taken for this measure.
- Mitigation Measure PSU-6a requires construction and demolition debris recycling.
- Mitigation Measure PSU-6b requires that the project applicant provide information to the City regarding how the project will recycle.
- Mitigation Measure AIR-3b would reduce some onsite emissions from trucks; however, this reduction is negligible so no reduction is taken for this measure.
- Mitigation Measure TRANS-6 would require Transportation Demand Management measures to be incorporated. A trip reduction of 3 percent (reflective of pedestrian facilities and interconnectivity) is taken for this measure, as calculated in URBEMIS.

Mitigation Measures for this Impact Area that would Reduce Emissions

Mitigation measures applied to this impact area that would reduce greenhouse gas emissions are as follows:

- Mitigation Measure AIR-6a requires Energy Star-rated roof materials or equivalent to be installed on all buildings.
- Mitigation Measure AIR-6b requires that the project achieve an average 5 percent exceedance of Title 24 energy efficiency requirements. This measure allows flexibility for efficiency on a per-building basis, while maintaining project-level performance criteria.

As shown in Table 3.3-32, total reductions are approximately 36.5 percent. The West Patterson Business Park Expansion's greenhouse gas emissions would not conflict with AB 32 and the Scoping

Plan, which has the purpose to reduce greenhouse gas emissions to 1990 levels by the year 2020. This is a less than significant impact with incorporation of mitigation.

Table 3.3-32: Operational Greenhouse Gas Emissions (With Mitigation and Regulations)

Source	Emissions (MTCO ₂ e per year)		
	Unmitigated	Reduction (%)	Reduction from Mitigation and Regulations
Motor vehicles	664,288	Pavley/LCFS/Mitigation /PDF: 38.0 ^a	252,389
Natural gas	4,055	Regulation: 9.2 ^b	373
Indirect electricity	61,475	Regulation: 15.3 ^c Mitigation/PDF: 1	9,406
Water transport	1,967	Mitigation: 5.0	98
Waste	4,889	Mitigation: 50.0 ^d	2,445
Refrigerants	29,632	Regulation: 50.0 ^e	14,816
Total	766,306	Total: 36.5	279,527
Significance Threshold	—	29% Reduction	—
Significant Impact?	—	No	—
Notes: ^a Mitigation/PDF refers to mitigation measures and project design features that would reduce emissions. Pavley/LCFS refers to the reduction from the Pavley regulations and the low carbon fuel standard regulation (see Regulatory section for more information). The reductions differ based on type of vehicle; the reductions are estimated with the Bay Area Air Quality Management District Greenhouse Gas Model, version 1.1.9 Beta. BGM Transportation output showing both unmitigated URBEMIS output and the mitigated, post-Pavley/LCFS emissions is provided in Appendix C. ^b Natural gas regulation refers to the ARB Scoping Plan measure Energy Efficiency; business as usual emissions in the State are 46.7 MMTCO ₂ e with reductions of 4.3 MMTCO ₂ e, or 9.2 percent. ^c Regulation for the electricity sector refers to the Scoping Plan measure, Renewables Portfolio Standards. The state business as usual inventory for California is 139.2 MMTCO ₂ e; the emissions reductions from the Renewables Portfolio Standards are 21.3 MMTCO ₂ e, or 15.3 percent. ^d The percent reduction; therefore, a 50-percent reduction is taken for this item. ^e The regulation for refrigerants refers to the High-Global Warming Potential Stationary Source Refrigerant Management Program. Beginning in 2011, the rule will require leak inspection, repairs, required service practices, and recordkeeping for large commercial and industrial systems that use more than 50 pounds of refrigerant for a single unit. Source: Michael Brandman Associates, 2012.			

Offsite Utility Alignments

As with the West Patterson Business Park Expansion Project, there are no approved greenhouse gas emission reduction plans or programs applicable to the Offsite Utility Alignments. In addition, the SJVAPCD has not yet provided best performance standards for this type of project. However, the Offsite Utility Alignments would not result in operational emissions. Therefore, the Offsite Utility Alignments would not need to reduce greenhouse gas emissions by 29 percent compared with business as usual, as it would result in construction emissions only. Construction emissions are discussed below.

Construction Emissions Inventory

During construction activities, greenhouse gases would be emitted from construction equipment, vehicle, and truck exhaust. Construction emissions were estimated using URBEMIS 2007 as

described in Impact AIR-3. Construction emissions are presented in Table 3.3-33. The SJVAPCD does not have thresholds or guidance regarding the significance of construction related emissions. However, that does not mean a significance finding should not be identified. AB 32 requires that emissions within the State are reduced to 1990 levels by the year 2020. Construction of the Offsite Utility Alignments is assumed to be completed in a short timeframe after the start of the project. In addition, these construction emissions are few and would be limited in duration and, therefore, are anticipated to be less than significant.

Table 3.3-33: Offsite Utility Alignments Construction Greenhouse Gas Emissions

Year	Phase	Carbon Dioxide Emissions (tons)	Emissions (MTCO ₂ e)
2013	Trenching Alignment 1	36.52	33
	Paving Alignment 1	6.51	6
	Trenching Alignment 2	36.42	33
	Trenching Alignment 3	36.41	33
Total Emissions		115.87	105
Note: MTCO ₂ e = metric tons of carbon dioxide equivalents, converted from tons by multiplying by the global warming potential of carbon dioxide (1) and 0.9072. Source: Michael Brandman Associates, 2012.			

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures AIR-3b, PSU-3, and TRANS-6, and:

MM AIR-6a Prior to issuance of building permits for each project use, the project applicant shall prepare and submit plans to the City of Patterson for review and approval demonstrating that Energy Star-rated roof materials or equivalent would be installed on all roofed facilities. Energy Star-rated roof specifications include:

- Built-up-roofs
- Metal roofing products
- Roof tiles
- Spray polyurethane foam roof systems
- Asphalt shingles
- Single-ply membranes
- Roof coating products, and
- Modified bitumen.

MM AIR-6b Prior to issuance of building permits for each project use, the applicant shall prepare and submit documentation to the City of Patterson for review and approval demonstrating that energy efficiency measures have been incorporated to result in an increased efficiency above Title 24 requirements. The applicant shall maintain a record of efficiency calculations for each proposed building, and demonstrate to the City of Patterson that each phase of the project shall achieve a minimum 5 percent increase of efficiency over the latest adopted edition of the Title 24 standards.

Level of Significance After Mitigation

Less than significant impact.

Climate Change Adaptation

Impact AIR-7: The project may be affected by climate change through a reduction in the quality and supply of water available within the State or increased flooding.

Impact Analysis

This impact will assess the West Patterson Business Park Expansion Project and Offsite Utility Alignments' potential to be exposed to climate change effects.

Background

Although human understanding of the Earth's climate is increasing, it is accepted by the majority of climate change researchers that anthropogenic sources of greenhouse gases are influencing climate patterns. There are several negative potential environmental effects associated with climate change. Worldwide, average temperatures are estimated by some researchers to increase by 1.8 degrees centigrade (°C) to 4°C, or 3 degrees Fahrenheit (°F) to 7°F, by the end of the 21st century. However, a global temperature increase does not translate to a uniform increase in temperature in all locations on the earth. Regional climate changes are dependent on multiple variables, such as topography. One region of Earth may experience increased temperature, increased incidents of drought and similar warming effects, whereas another region may experience a relative cooling. According to the United Nations Intergovernmental Panel on Climate Change's Working Group II Report, climate change impacts to North America may include:

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

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

Water Supply

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

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

To conserve water, effective January 1, 2010, all development must meet the State Model Water Efficient Landscape Ordinance requirements that establish landscape design requirements for most new and rehabilitated landscape areas. Public landscapes and private development projects including developer installed single-family and multi-family residential landscapes with at least 2,500 square feet of landscape area are subject to the Model Ordinance. Homeowner provided landscaping at single-family and multi-family homes are subject to the Model Ordinance if the landscape area is at least 5,000 square feet.

Sea Level Rise and Flooding

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

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

water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

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

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

West Patterson Business Park Expansion Project

Water Supply

Impact PSU-3 in Section 3.12, Public Services and Utilities evaluated the availability of potable water supplies, and determined that sufficient water supplies exist. In recognition that the City's long-term water supply planning projections account for water conservation, Mitigation Measure PSU-3 requires the project applicant to incorporate applicable Best Management Practices into project design and landscaping. The incorporation of these measures would ensure that the proposed project would be consistent with the water conservation measures outlined in the Urban Water Management Plan.

Sea Level Rise

The West Patterson Business Park Expansion Project is not located near the coastal area and is at sufficient elevation to not be impacted by rising sea levels.

Flooding

As discussed in Impact HYD-5 and shown in Exhibit 3.8-2 in Section 3.8, Hydrology and Water Quality, with the exception of the Del Puerto Creek channel, the project site is outside of the Federal Emergency Management Agency (FEMA) designated 100-year floodplain. Thus, project structures would not be at risk of flooding during peak storm events.

Wildfires

As discussed in Section 7, Effects Found Not to be Significant, wildfires would not pose a hazard to the project. Any increases in wildfires as a result of climate change would be less than significant.

Offsite Utilities Improvement

The Offsite Utilities Improvements would not change any existing land use activities or confer any development rights that would allow for new construction to occur. Therefore, the Offsite Utilities Improvements would not be at any greater risk of climate change effects than beyond what currents exists. No impacts would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure PSU-3.

Level of Significance After Mitigation

Less than significant impact.

3.4 - Biological Resources

3.4.1 - Introduction

This section describes the existing biological setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on a site reconnaissance performed by Michael Brandman Associates. Supporting information is provided in Appendix D.

3.4.2 - Environmental Setting

Biological Setting

The project site is located in unincorporated Stanislaus County, California, adjacent to the City of Patterson, and consists of approximately 1,119 gross acres. The project site is generally bounded by Interstate 5 (I-5) and the California Aqueduct (west), Zacharias Road (north), Rodgers Road (east) and Villa del Lago highway commercial center (south).

Temperatures in this region range from average lows of 36.1 degrees Fahrenheit (°F) in December and January to highs of 97.2°F in July. Annual precipitation averages 11.88 inches, mainly in the form of rain, primarily between the months of November and April. The topography of the project area is level at approximately 200 feet above mean sea level, and soils present within the vicinity are heavily compacted.

Project Site Conditions

The project site contains cultivated agricultural land that is planted as orchards and row crops. The California Aqueduct and Delta-Mendota canals traverse the project in a northwest-southeast direction and are used for irrigating orchards and row crops. Del Puerto Creek crosses the northwest portion of the project site. A cluster of agricultural and residential structures and related ornamental landscaping is located toward the center of the site, adjacent to the Delta-Mendota Canal. Unpaved dirt roads provide access throughout the site.

Vegetation

The project site is significantly disturbed and is dominated by orchards and row crops (cherries, apricots, peaches, and tomatoes). Non-native grasses and ruderal (weedy) species are found in crop margins and abutting the unpaved access roads. At the time of the survey, the peach orchard crop was being harvested, and heavy machinery, including big rigs and tractors, were being utilized onsite. The dominant plant species observed within the project site, in addition to the orchard and row crops, include yellow starthistle (*Centaurea solstitialis*), plantago (*Plantago* spp.), Bermuda grass (*Cynodon dactylon*), and short-pod mustard (*Hirschfeldia incana*). Other common species observed in orchard and row crop margins include datura (*Datura stramonium*), Russian thistle (*Salsola tragus*), wild oats (*Avena fatua*), Johnson grass (*Sorghum halepense*), and foxtail fescue (*Vulpia myuros*). Vegetation observed in the vicinity of Del Puerto Creek include rabbitsfoot grass (*Polypogon monspeliensis*),

willow (*Salix* spp.), common cocklebur (*Xanthium strumarium*), wild oats, bulrush (*Typha*), curly dock (*Rumex crispus*), and poison hemlock (*Conium maculatum*).

Wildlife

The project site provides suitable habitat for common wildlife species known to occur within disturbed/agricultural settings. Avian species observed or detected onsite include great egret (*Ardea alba*), scrub jay (*Corvus brachyrhynchos*), American crow (*Corvus brachyrhynchos*), and song sparrow (*Melospiza melodia*). A red-tailed hawk (*Buteo jamaicensis*) was detected by its call within the vicinity of the project site; therefore, there is a potential for red-tailed hawk to forage within the project site. Other species observed or detected onsite included western fence lizard (*Sceloporus occidentalis*), rabbit (*Oryctolagus cuniculus*), and California ground squirrel (*Spermophilus beecheyi*).

Special-Status Species

Special-status species are those animal and plant species that, in the judgment of the resource agencies, trustee agencies, and certain non-governmental organizations, are sensitive and warrant special consideration in the California Environmental Quality Act (CEQA) process. These include the following:

- Officially designated “threatened,” “endangered,” or “candidate” species federally listed by the United States Fish and Wildlife Service (USFWS) and protected under the Federal Endangered Species Act.
- Officially designated “rare,” “threatened,” “endangered,” or “candidate” species state listed by the California Department of Fish and Game (CDFG) and protected under the California Endangered Species Act. CDFG also maintains a list of “Fully Protected” species as well as “California Species of Special Concern” that are also generally included as special-status species under CEQA.
- Species considered rare, threatened, or endangered under the conditions of Section 15380 of the CEQA Guidelines, such as plant species identified on lists 1A, 1B, and 2 in the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California.
- Other species considered sensitive, such as birds protected under the Migratory Bird Treaty Act (MBTA), which includes most native birds. A species may also be designated as special concern at the local level.
- Bat species listed as Medium and High Priority with the Western Bat Working Group.

The habitat mapping and field survey were reviewed for potential habitat for the special-status species identified from literature, database searches, and MBA’s knowledge of the species of the region. A species is determined to have the potential to occur on the project site if its documented geographical

range from the literature and database searches includes the vicinity of the project site and if suitable habitat for the species was identified within or near the project site.

Sensitive Plant Species

No sensitive plant species were observed on the project site during the reconnaissance-level survey. The project site is heavily impacted by the existing agricultural operations and does not contain suitable habitat for big tarplant (*Blepharizonia plumose*), round leaved filaree (*California macrophylla*), Lemmon's jewel flower (*Caulanthus lemmonii*), or diamond-petaled California poppy (*Eschscholzia rhombipetala*). The complete California Natural Diversity Data Base (CNDDB) list of sensitive plant species evaluated for their potential to occur on the project site, recorded within the Patterson and eight surrounding quads, is included in Appendix D.

Sensitive Wildlife Species

The non-native grasses and ruderal plant species that dominate the upland portions of Del Puerto Creek provide moderately suitable habitat for two sensitive wildlife species known to occur in the region: burrowing owl (*Athene cunicularia*) and loggerhead shrike (*Lanius ludovicianus*). Suitable burrowing owl habitat also occurs along the margins of row crops and earthen irrigation channels where ground squirrel burrows are present. The orchard trees provide suitable roosting habitat for the western red bat (*Lasiurus blossevillei*), and potentially for the hoary bat (*L. cinereus*). Other species of bats (e.g., pallid bat [*Antrozous pallidus*]) may also occur in the structures (e.g., old barn, and other older buildings) associated with the residential area onsite.

There are three records of burrowing owls within several miles of the project site, to the north, east and west; refer to Exhibit 3.4-1. This species prefers open grasslands with short vegetation (generally less than 6 inches in height) and relies mainly on California ground squirrel burrows for nesting and refuge. They will also use burrows of other small mammals and refuse piles (such as discarded construction materials). This species feeds on a variety of insects, reptiles, and small rodents.

Loggerhead shrike has been recorded in ruderal habitat along the Delta-Mendota Canal just east of the site. The loggerhead shrike prefers open country for hunting, perches for scanning, and fairly dense shrubs and brush for nesting.

While there are a number of other special-status species that occur within 5 to 10 miles of the site, the site lacks suitable habitat for them or is inaccessible to them. For instance, there are four historic records of San Joaquin kit fox (*Vulpes macrotis mutica*) within 10 miles of the project site. These sightings all occurred on the west side of I-5. The San Joaquin kit fox prefers annual grasslands or open areas with scattered shrubby vegetation, and friable soils for burrowing. This species preys on a variety of species including insects and reptiles, though its preferred prey is small rodents. While the project site provides a small amount of marginally suitable habitat for kit fox, they are not expected to occur onsite, as I-5 seems to act as a barrier to east-west movement of the species.

Nesting Birds

The orchard and ornamental trees on the project site provide suitable nesting habitat for a number of common tree-nesting avian species. Although not considered natural nesting habitat, the utility poles traversing the project site provide suitable nesting habitat for larger avian species such as red-tailed hawk and American crow. One small crow or raptor nest was observed at the cell tower onsite near the residential structures; however, it appeared to be inactive. As such, construction of the proposed project may result in potential impacts to avian species, if construction activities take place during the general avian nesting season from February through August.

Jurisdictional Waters and Wetlands

Del Puerto Creek traverses through the northwestern portion of the project site and is a tributary to the San Joaquin River. In addition, there are portions of the site that were inundated with irrigation water and would not be considered jurisdictional. These inundated areas are surrounded by disturbed agricultural land and non-native vegetation dominated by non-native grasses. Several native hydrophytic plant species were observed within and along areas inundated with irrigation water and along Del Puerto Creek, including bulrush (*Scirpus* sp.), a facultative wetland obligate species; rabbitsfoot grass, a facultative wetland species; and curly dock (*Rumex crispus*), a facultative wetland species.

3.4.3 - Regulatory Framework

Federal

Endangered Species Act

The USFWS and the National Marine Fisheries Service administer the Federal Endangered Species Act (FESA), which provides a process for listing species as either threatened or endangered, and methods of protecting them. The Endangered Species Act (ESA) defines “endangered” as any plant or animal species that is in danger of extinction throughout all or a significant portion of its range. A “threatened” species is a species that is likely to become endangered in the near future. A “proposed” species is one that has been officially proposed by USFWS for addition to the Federal threatened or endangered species list.

Section 9 of the Endangered Species Act prohibits the “take” of any fish or wildlife species listed under ESA. The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. “Harm” includes not only the direct taking of a species itself, but also in the destruction of the species’ habitat resulting in potential injury to the species. Under the regulations of the ESA, the USFWS may authorize take when it is incidental to, but not the purpose of, an otherwise lawful act.



Source: ESR Aerial Imagery, CNDDDB Data December 2011.

Legend

Project Site

5 Mile Buffer

Common Name - Scientific Name

1	big tarplant - <i>Blepharizonia plumosa</i>
2	burrowing owl - <i>Athene cunicularia</i>
3	diamond-petaled California poppy - <i>Eschscholzia rhombipetala</i>
4	Lemmon's jewel-flower - <i>Caulanthus lemmonii</i>
5	loggerhead shrike - <i>Lanius ludovicianus</i>
6	moestan blister beetle - <i>Lytta moesta</i>
7	prairie falcon - <i>Falco mexicanus</i>
8	round-leaved filaree - <i>California macrophylla</i>
9	San Joaquin kit fox - <i>Vulpes macrotis mutica</i>
10	San Joaquin whipsnake - <i>Masticophis flagellum ruddocki</i>
11	tricolored blackbird - <i>Agelaius tricolor</i>
12	western spadefoot - <i>Spea hammondi</i>

Exhibit 3.4-1
CNDDDB-Recorded Occurrences of
Special-Status Species within
5 Miles of the Project Site

Clean Water Act

Section 404 of the Federal Clean Water Act (CWA), which is administered by the United States Army Corps of Engineers (USACE), regulates the discharge of dredge and fill material into “waters of the United States.” Once Section 404 jurisdiction is established, several different types of permitting procedures cover the discharge of dredge and fill material. The first category of permits is the General Permit (falling into two sub-categories: nationwide and regional permits), which provide standing authority for certain specified activities, and set forth various compliance requirements necessary to obtain coverage without further USACE involvement. The second category of permits is the Individual Permit. Unlike the General Permit process, individual permit applications are subject to public notice and a public interest review, which involve a comprehensive analysis of a number of identified factors to evaluate the probable impacts on the public interest of the proposed activity. These permit applications also require preparation of an alternatives analysis that evaluates whether there is a “practicable alternative” to the proposed discharge. The USACE has established a series of nationwide permits that authorize certain activities in waters of the United States, if a proposed activity can demonstrate compliance with standard conditions. Normally, the USACE requires an individual permit for an activity that would affect an area equal to or in excess of 0.5 acre of waters of the United States. Projects that result in impacts to less than 0.5 acre can normally be conducted pursuant to one of the nationwide permits, if consistent with the standard permit conditions. The USACE also has discretionary authority to require an Environmental Impact Statement for projects that result in impacts to an area between 0.1 and 0.5 acre. Use of any nationwide permit is contingent on the activities having no impacts to endangered species.

Section 401 of the CWA requires that “any applicant for a federal permit for activities that involve a discharge to waters of the State shall provide the federal permitting agency with a certification from the State, in which the discharge is proposed, that states the discharge will comply with the applicable provisions under the federal Clean Water Act.” Therefore, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification from the Regional Water Quality Control Board (RWQCB). This certification requirement applies to both General and Individual Permits.

Migratory Bird Treaty Act

The MBTA makes it unlawful to kill, possess or trade or attempt to do the same to any migratory bird listed in Title 50 of the Code of Regulations, Section 10.13, including their nests, eggs, or young, except in accordance with regulations prescribed by the Secretary of the Interior.

State

California Endangered Species Act (CESA)

The CDFG administers the CESA; its basic policy is to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA further declares that state agencies will not approve projects as proposed that would jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat essential to the

continued existence of those expenses, if there are reasonable and prudent alternatives available. CESA prohibits the take of listed threatened or endangered species. Unlike FESA, CESA also protects species that are identified as candidates for listing as threatened or endangered. Under CESA, take means to “hurt, pursue, capture or kill,” or attempt any of these acts. This definition of take is narrower than the FESA definition of take, because it does not include harm to or harassment of a species. It also does not prohibit indirect harm to CESA-listed species by way of habitat modification. The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered one that is present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. If a proposed project would result in impacts to a species protected by CESA, an “incidental take” permit would be necessary, which may authorize the take so long as it is incidental to an otherwise lawful activity and would not jeopardize the continued existence of the species, and so long as certain other specified conditions are met.

State Water Resources Control Board/California Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and the RWQCB regulate activities in waters of the State (which include wetlands) through Section 401 of the CWA. If an applicant proposes to discharge dredged or fill material into any waters of any state, Section 401 of the CWA requires that, in addition to an application for a permit, the applicant must provide proof of state or intrastate water pollution control agency certification of compliance with its water quality criteria (as described more fully above).

Porter-Cologne Water Quality Act

The RWQCB regulates actions that would involve “discharging waste, or proposing to discharge waste, within any region that could affect the water of the state” (California Water Code Section 13260(a)), pursuant to provisions of the Porter-Cologne Water Quality Act. Waters of the State are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (California Water Code 13050 (e)).

National Pollutant Discharge Elimination System (NPDES)

The CWA requires local jurisdictions to address the problem of pollutants in stormwater runoff from development. The CWA provides for the control of the discharge of any pollutant into navigable waters from any point sources. To regulate point source pollution, the CWA provides that the EPA may issue national pollution discharge elimination system (NPDES) permits. NPDES permits are issued by the EPA or by the states under EPA-approved permit programs that incorporate CWA’s technological standards. California’s permit program is implemented through SWRCB and the regional water quality control boards. Section 402(p) of the CWA establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES program, and requires controls to reduce the discharge of pollutants to the maximum extent practicable, including

management practices, control techniques and systems, and design and engineering methods. The regional boards implement the CWA's municipal stormwater requirements through the State's Municipal Storm Water Permitting Program. While federal regulations allow the permitting options for stormwater discharge (Individual and General Permits), the SWRCB has elected to adopt only one statewide General Permit. In September 2009, the SWRCB adopted a new NPDES General Permit for the stormwater discharges associated with construction and land disturbance activities (No. 2009-0009-DWQ) that, among other things, require compliance with certain numeric effluent limitations. This General Permit will become effective on July 1, 2010. It requires development of a site-specific Storm Water Pollution Prevention Plan that specifies Best Management Practices that will prevent construction pollutants from contacting stormwater with the interest of keeping all products of erosion from moving off site to receiving waters. This General Permit is implemented and enforced by the nine RWQCBs.

California Environmental Quality Act

As discussed above, specific federal and state statutes protect threatened and endangered species. In addition, CEQA Guidelines Section 15380 provides that a species not listed on the federal or state lists of threatened or endangered species may be considered rare or endangered under CEQA review if the species can be shown to meet certain criteria.

In addition, sensitive plant species are afforded protection under CEQA through the CNPS inventory of rare, threatened, and endangered plants of California. CNPS is a California resource conservation organization that has developed an inventory of California's sensitive plant species. This inventory summarizes information on the distribution, rarity, and endangerment of California's vascular plants. The inventory is divided into four lists that are based on the rarity of the species. In addition, the CNPS provides an inventory of plant communities that are considered sensitive by state and federal resource agencies, academic institutions, and various conservation groups. Determination of the level of sensitivity is based on the number and size of remaining occurrences as well as recognized threats. See below for additional information regarding the CNPS inventory.

California Fish and Game Code

Sections 1600 through 1603

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

Sections 3503 and 3511

Particular sections of the Fish and Game Code are applicable to natural resource management. For example, Section 3503 of the Code states it is unlawful to take, possess, or destroy birds, their nests, or eggs of any bird. Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered take. All raptors, their active nests, eggs, and young are protected. Additionally, Section 3511 of the Code lists fully protected bird species such as the white-tailed kite and golden eagle that may not be taken or possessed at any time, except in certain limited circumstances.

California Native Plant Protection Act

The California Native Plant Protection Act is intended to preserve, protect, and enhance endangered or rare native plants in California. This Act directs CDFG to establish criteria for determining what native plants are rare or endangered. Under this Act, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is rare, although not threatened with immediate extinction, if it is in such small numbers throughout its range that it may become endangered if its present environment worsens. This Act prohibits any person from importing into or taking, possessing or selling within California, except as incident to the possession or sale of the real property on which the plant is growing, any endangered or rare native plant or as otherwise excepted under the Act.

The CNPS maintains a list of plant species native to California that have low numbers, limited distribution, or otherwise are threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to population of rare plants receive consideration under CEQA review. The CNPS ranking system applicable to the project are defined below:

- List 1A: Plants presumed 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

Local

City of Patterson

General Plan

The City of Patterson General Plan sets forth the following goal and policies relevant to biological resources:

- **Goal NR-1:** To protect and preserve the quality of water from local watersheds, groundwater resources, and water bodies including creeks, reservoirs, and the San Joaquin River.
- **Policy NR-1.1:** Open space conservation. The City shall conserve open space areas and drainage canals to protect water resources within the local watershed and the San Joaquin River.

- **Policy NR-1.2:** Stormwater quality. The City shall implement measures to minimize the discharge of pollutants and sediment into Salado Creek, Del Puerto Creek and the San Joaquin River (see Goal PS-3 for more policies on stormwater quality).
- **Policy NR-1.4:** Sedimentation. The City shall continue to support local, regional, and statewide efforts to minimize the discharge of sediment into waterways, including Salado Creek, Del Puerto Creek and the San Joaquin River.
- **Goal NR-3:** To protect natural open space areas, sensitive native vegetation, and wildlife communities and habitat.
- **Policy NR-3.2:** Protection of sensitive species. A project with the potential to adversely impact special status species or their habitat, shall provide evidence of compliance with the relevant provisions of state and federal laws relating to the preservation of rare, threatened, or endangered species and their habitat prior to project approval and/or prior to construction as determined by the requirements set forth in the federal and state Endangered Species Acts, the federal Clean Water Act, the federal Rivers and Harbors Act and the Implementation Measures provided in Appendix NR.
- **Policy NR-3.3:** On-site resource preservation. The City shall encourage new development to preserve on-site natural elements that contribute to the community's native plant and wildlife species value and to its aesthetic character.
- **Policy NR-3.4:** Agency coordination. The City shall support, and participate in, local and regional efforts of local, state and federal resource agencies (e.g. Stanislaus County, California Department of Fish and Game, Army Corps, United States Fish and Wildlife Service) to protect, restore and maintain viable, contiguous areas of habitat for sensitive plant and animal species (see also Implementation Measures and Appendix NR).
- **Policy NR-3.5:** Project-specific surveys for rare plants. Where future development projects have the potential to impact natural plant communities, the City shall require the project applicant to conduct a rare plant survey prepared by a qualified biologist in accordance with applicable guidelines of the USF&WS, CDFG and CNPS. The survey shall identify and map any existing rare, threatened, or endangered plant species. If any of these species are found, mitigation measures shall be developed within the project-level CEQA document and implemented with performance monitoring to avoid significant impacts. The project applicant shall be required to consult with the CDFG and USFWS regarding appropriate mitigation for potential impacts to each sensitive plant species found to occur at the project site. Mitigation may include (but is not limited to) the acquisition and permanent protection of habitat for the subject species of concern, in addition to the implementation of project-specific mitigation measures designed to reduce potential impacts to individual animals. These measures shall be based on the biological requirements of each species found to occur at a particular site, as well as a complete description of the proposed project and its potential impacts to the subject species (see also Implementation Measures and Appendix NR).
- **Policy NR-3.6:** Wildlife surveys for individual projects. Where future development projects have the potential to adversely impact sensitive wildlife resources, the City shall require the

project applicant to conduct a biological field survey to assess habitat suitability and wildlife utilization of the project site. All biological field surveys shall be prepared consistent with the requirements of relevant state and federal resources agencies, and each project applicant shall consult with applicable state and federal agencies regarding the results of these surveys and appropriate mitigation measures. Additionally, species-specific surveys shall be conducted in accordance with current guidelines for each rare, threatened, and endangered animal species potentially occurring at the site. If any sensitive wildlife species are found to occur on or utilize the existing habitat as a proposed project site, the project applicant shall be required to consult with CDFG and USFWS regarding appropriate mitigation prior to any City action on a development entitlement request. Mitigation may include (but is not limited to) the acquisition and permanent protection of habitat for the subject species of concern, in addition to the implementation of project-specific mitigation measures designed to reduce the potential impacts for individual animals. These measures shall be based on the biological requirements of each species found to occur at a particular site, as well as a complete description of the proposed projects and its potential impacts to the subject species (see also Implementation Measures and Appendix NR).

- **Policy NR-3.7:** Riparian habitat protection. The City shall preserve the ecological integrity of creek corridors, canals, and drainage ditches that support riparian resources by preserving native riparian plants and, to the extent feasible, removing invasive nonnative plants. If preservation of the ecological integrity of existing resources is found to be infeasible, adverse impacts to riparian resources shall be fully mitigated consistent with the requirements of applicable state and federal regulations (see also Implementation Measures and Appendix NR).
- **Policy NR-3.8:** Wetland protection. The City shall preserve and protect wetland resources including creeks, rivers, ponds, marshes, vernal pools, and other seasonal wetland areas, to the extent feasible. If preservation of the ecological integrity of existing wetland resources is found to be infeasible, adverse impacts to such resources shall be fully mitigated consistent with the requirements of applicable state and federal regulations (see also Implementation Measures and Appendix NR).
- **Policy NR-3.9:** Monitoring. Monitoring of mitigation and restoration activities shall be consistent with requirements for each species or habitat as prescribed by the relevant regulatory jurisdictional agencies. For listed or candidate species, species of special concern, or sensitive habitats for which no mitigation or avoidance measures have been published, the City shall require evidence of coordination with the responsible agencies prior to acceptance of mitigation, avoidance measures, or monitoring requirements.
- **Policy NR-3.10:** Open space conservation. The City shall continue to preserve, protect, and provide access to designated open space areas that may be established along the San Joaquin River, Del Puerto Creek, and undevelopable floodplains.

3.4.4 - Methodology

MBA staff conducted a field reconnaissance on September 8, 2011 to document conditions on the site. In addition, the following sources of data and information were reviewed to determine the potential for special-status plant or wildlife species to occur on the project site; relevant supporting information is included in Appendix D:

- The Patterson, California USGS 7.5-minute topographic quadrangle
- Aerial photography of the project site
- A Natural Resource Conservation Service soils map of the project site
- CDFG California Natural Diversity Data Base (CNDDB) records for the Patterson, California 7.5-minute topographic quadrangle and the surrounding eight quadrangles
- CDFG California Wildlife Habitat Relationship System
- USFWS list of endangered and threatened species that may occur or be affected by the project, in the Patterson, California quadrangle
- CNPS online Inventory of Rare and Endangered Vascular Plants of California

3.4.5 - Thresholds of Significance

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

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?
- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (Refer to Section 7, Effects Found Not To Be Significant).

3.4.6 - Project Impacts and Mitigation Measures

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

Special-Status Species

Impact BIO-1:	The proposed project may have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the United States Fish and Wildlife Service.

Impact Analysis

This impact will address the proposed project's potential to have a substantial adverse effect on special-status species.

West Patterson Business Park Expansion Project

The proposed project has the potential to adversely affect five special-status wildlife species or categories: the burrowing owl, the loggerhead shrike, nesting birds, the western red bat, and the hoary bat. Each one is discussed separately. While the Swainson's hawk (*Buteo swainsoni*) and San Joaquin kit fox are considered absent from the site, a discussion of the species is included because the regulatory agencies watch these species closely.

Burrowing Owl

The burrowing owl has a low potential to forage and reside within the project site. There are two known observations of the species within 3 miles of the site: one to the east and one to the west (Exhibit 3.4-1). The eastern sighting was of a single bird during the wintering season—likely a winter migrant—and the other, just west of downtown Patterson, was a breeding pair. The site where the breeding pair was observed was to have been built out as soon as young were independent, but this site is now thought to have been extirpated.

The project site provides suitable habitat (burrows for nesting, and adequate prey base) for burrowing owls, though the likelihood an owl would occur onsite is rather low, considering that the most recent observation of species occurred eight years ago (and the only other occurrence within 5 miles of the site occurred more than 20 years ago). Burrowing owls are protected under the MBTA and are a California species of special concern. As such, Mitigation Measure BIO-1a requires that a standard pre-construction survey be performed for this species and identifies avoidance measures if this species is found to be present.

Loggerhead Shrike

The loggerhead shrike has a moderate potential to forage and nest within the project site, because there are shrubs and small trees offering potential breeding habitat adjacent to grasslands and oak savannahs, and an adequate prey base; furthermore, there is a recorded occurrence of breeding loggerhead shrike approximately 1 mile from the project site, which occurred in 2002 (Exhibit 3.4-1). Loggerhead shrikes are protected under the MBTA and are a California species of special concern. Mitigation Measure BIO-1a requires that a standard pre-construction survey be performed for this species and identifies avoidance measures if this species is found to be present.

Migratory Birds

A number of migratory birds could breed onsite; therefore, preconstruction surveys within 30 days of construction activities must be conducted by a qualified biologist during the breeding season (February through August). These surveys can occur concurrently with burrowing owl and loggerhead shrike surveys. Mitigation Measure BIO-1a requires that a standard pre-construction survey be performed for nesting birds and identifies avoidance measures if such birds are found to be present.

Swainson's Hawk

In the Central Valley of California, the Swainson's hawk breeds mainly in mature trees associated with riparian corridors and forages over multiple habitat types. This species preys on a variety of species including insects, reptiles, and small mammals. This species is often seen foraging over alfalfa fields. There are six CNDDDB occurrence records that occurred between 1988 and 2001 within 10 miles of the site, all located to the east of the site along the San Joaquin River. This species could occasionally forage over the site, though it is more likely it forages over those agricultural lands closer to its breeding grounds associated with the San Joaquin River. No Swainson's hawks were observed during the reconnaissance survey. Nonetheless, the Swainson's hawk is listed as threatened under CESA and is protected under the MBTA. Therefore, protocol surveys are recommended for Swainson's hawk prior to construction to ensure its nesting is absent from the project site's vicinity. Recommended survey methods follow the Swainson's hawk Central Valley protocol. This includes performing nesting surveys within a 0.5-mile radius of the project site for at least two periods prior to commencement of construction. Mitigation Measure BIO-1b requires that a standard pre-construction survey be performed for this species and identifies avoidance measures if this species is found to be present.

The project site contains orchards, row crops, and fallow fields. The Mitigation Guidelines for Swainson's Hawk indicates that the following agricultural land uses can provide foraging habitat suitable for the Swainson's hawk: "alfalfa; fallow fields; beet, tomato, and other low-growing row or field crops; dry-land and irrigated pasture; rice land (when not flooded); and cereal grain crops (including corn after harvest)." As such, only the portions of the project site containing row crops or fallow fields would be considered to have the potential to provide foraging habitat; the orchards would not.

There are several recorded occurrences of the Swainson's hawk within 10 miles of the project site. The Mitigation Guidelines for Swainson's Hawk establishes that projects within 10 miles of an active nest tree but greater than 5 miles from the nest tree shall provide 0.50 acre of habitat mitigation land for each acre of foraging habitat impacted. Accordingly, these requirements are reflected in Mitigation Measure BIO-1c.

San Joaquin Kit Fox

The San Joaquin kit fox occurs in grassland, prairies, and other arid plant communities throughout the Central and Salinas valleys of California. There are four recorded observations of the species within approximately 8 miles of the project site: one individual observed in 1973, one individual observed in 1989, one individual found dead on the west side of I-5 in 1990, and one individual found dead on the west side of the I-5 in 2004. No direct observations of kit fox or its sign (e.g., scat, prints, or appropriately sized burrows) were observed during the site visit. Since the site lies on the east side of I-5, it is presumed kit fox would be absent from the site, as I-5 appears to act as a barrier to movement, evidenced by a complete lack of observations of kit fox on the east side of the highway within 10 miles of the site, and the two observations of dead fox on the west side of the highway. Furthermore, the California Aqueduct and the Delta Mendota Canal lie between I-5 and the site, creating a further impediment to eastward movement. The probability that San Joaquin kit fox would occur on the site is extremely low. Nonetheless, Mitigation Measure BIO-1d requires that a standard pre-construction survey be performed for this species and identifies avoidance measures if this species is found to be present.

Western Red and Hoary Bats

Both the western red and hoary bats are solitary animals, coming together only for mating. Both species are tree dwelling; the site supports potentially suitable habitat for these species within the orchards and within the mature ornamental trees associated with the developed areas of the site. There are no CNDDDB-recorded occurrences within 5 miles of the site for either of these species; however, the site is located within their current range. A lack of records in the CNDDDB does not necessarily mean a lack of presence in the region. Therefore, to be prudent, presence/absence surveys should be conducted for bats prior to removing orchard trees and trees associated with the developed portion of the site. Other bat species (e.g., pallid bat) could occur in onsite structures (such as the old barn), and pre-demolition surveys for bats should be conducted. Mitigation Measure BIO-1e requires that a standard pre-construction survey be performed for this species and identifies avoidance measures if this species is found to be present.

Offsite Utility Alignments

Alignment 3 would cross through paved, disturbed, and undeveloped areas, while Alignments 2 and 3 would be located entirely within paved or disturbed areas.

Alignment 3 would total approximately 7,500 lineal feet, of which the first 4,000 lineal feet follow paved or disturbed areas located along Lateral 6 South and the remaining 3,500 lineal feet traverse

undeveloped land. There is no vegetation or habitat within the northern portion of this alignment suitable for nesting by special-status avian species as the alignment is disturbed by agricultural and urban development. The southern portion of the alignment also does not contain vegetation suitable for nesting by special-status avian species or roosting by special-status bat species. However, this area may provide suitable habitat for the burrowing owl and San Joaquin kit fox. As such, Mitigation Measures BIO-1a and BIO-1d would apply to the development of Alignment 3.

Alignment 2 would total approximately 3,400 lineal feet and would follow the east side of the Delta-Mendota Canal, which contains paved and disturbed areas. There is no vegetation or habitat within this alignment suitable for nesting by special-status avian species or roosting by special-status bat species. However, Alignment 2 is adjacent to undeveloped land that may support the burrowing owl and San Joaquin kit fox; therefore, such species may be affected by construction activities. As such, Mitigation Measures BIO-1a and BIO-1d would apply to the development of Alignment 2.

Alignment 1 would total approximately 2,500 lineal feet and would follow Rogers Road and Sperry Avenue, which contains paved and disturbed areas. There is no vegetation or habitat within this alignment suitable for nesting by special-status avian species or roosting by special-status bat species. However, Alignment 1 is adjacent to undeveloped land that may support the burrowing owl and San Joaquin kit fox; therefore, such species may be affected by construction activities. As such, Mitigation Measures BIO-1a and BIO-1d would apply to the development of Alignment 1.

Conclusion

No sensitive species were observed on the site during the reconnaissance survey, and there are no known or recorded observations of any sensitive species associated with the site. The mitigation measures below are presented to ensure special-status species remain absent from the site, and that no animal would be harmed in the unlikely event an errant animal is found onsite prior to construction. With the implementation of Mitigation Measures BIO-1a through BIO-1e, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-1a No more than 14 days prior to ground-disturbing activities that occur within the nesting season (typically from mid-February to mid-September), a qualified biologist shall perform a pre-construction survey for burrowing owl, loggerhead shrike, or nesting migratory birds active within the project site and within a 200-foot buffer of the project site to determine the presence or absence of these species. If these species are determined to be present, the applicant shall follow the guidelines outlined by the California Department of Fish and Game and/or the U.S. Fish and Wildlife Service:

- If burrowing owls are found onsite during the nesting season (February 1 to August 31), they shall be avoided by a 250-foot work-free buffer until it has been determined by a qualified biologist that the young have fledged and are independent of their parents. The 250-foot work-free buffer will be clearly defined (e.g., with orange construction fencing), and a biological monitor will visit the site randomly throughout the breeding season to ensure the area remains work-free and the owls are not negatively affected by construction activities.
- If loggerhead shrike or any other migratory birds are found nesting onsite, a 50-foot work-free buffer area will be established and monitored by a qualified biologist until young have fledged and are independent of their parents. Again, nests and work-free buffers would be monitored.
- If burrowing owls occur on the project area during the wintering season (September 1 to January 31), and construction is slated to begin during this time and active burrows cannot be avoided, an eviction of owls can be conducted to ensure owls move off the site prior to commencement of construction. The eviction process includes the installation of one-way doors that remain in all burrows of suitable size for at least 3 days, monitored by a qualified biologist, and then hand-excavating burrows to ensure no owl remains in the burrow. Once the site is clear of owls, the burrows can be backfilled, after which ground-disturbing construction activity can commence.
- In the unlikely event burrowing owls are found onsite, mitigation lands must be purchased to offset the loss of their habitat. The standard mitigation lands required to loss of habitat is 6.5 acres for every pair of owls found onsite.

MM BIO-1b No more than 14 days prior to ground-disturbing activities during the breeding season (February 1 to August 31), a qualified biologist shall perform pre-construction surveys for the Swainson's hawk in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. In accordance with the guidelines, surveys shall occur within a 0.5-mile radius of the site, and shall involve a minimum of two survey periods. In the event that one or more Swainson's hawks are observed to be nesting, a work-free buffer area shall be established and monitored by a qualified biologist. The biologist shall have the discretion to determine the appropriate buffer, which may involve consultation with the California Department of Fish and Game, as appropriate. The biologist shall determine when the nest has been vacated, at which point, the work-free buffer area can be removed.

MM BIO-1c Prior to issuance of grading permits, the applicant shall provide documentation to the City of Patterson demonstrating that Swainson's hawk foraging habitat mitigation has

been obtained at a ratio of 0.50 acre for each 1.00 acre of suitable foraging habitat developed. “Suitable foraging habitat” consists of row crops or fallow fields that would be affected by construction activities. Land planted as orchards shall not be treated as suitable foraging habitat pursuant to the guidance in the Mitigation Guidelines for Swainson’s Hawk. The applicant shall mitigate for the loss of Swainson’s hawk foraging habitat through (1) payment of \$600 per acre for offsite preservation of foraging habitat to a resource agency or a third-party organization acceptable to a resource agency or (2) acquisition of an irrevocable instrument (e.g., deed restriction or easement) for preservation of foraging habitat on a property that provides habitat of equal or greater quality. This mitigation measure may be coordinated with Mitigation Measure AG-1.

MM BIO-1d The project applicant shall adhere to the following requirements to avoid or minimize adverse impacts on the San Joaquin kit fox:

- No more than 14 days prior to the first ground-disturbing activity, a qualified biologist shall thoroughly walk the project site, as well as a 200-foot buffer around the perimeter of the project site, to locate potential San Joaquin kit fox dens. If no dens are located, no further surveys efforts are required. If dens are located during this survey effort, the status of the dens shall be assessed and the USFWS and CDFG shall be consulted.
- All vehicles operating within the construction area shall observe a maximum 20-mph speed limit.
- All ground-disturbing construction activities shall occur during daylight hours.
- All excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each work day or shall have escape ramps constructed of earth fill or wooden planks installed. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If an animal is found within these structures, the animal shall be allowed to leave on its own without harm or harassment.
- All construction piles, culverts, or similar structures with a diameter of 4 inches or greater that are stored at the construction site shall be thoroughly inspected for animals prior to burial, capping, or moving. If a kit fox is found within any of these structures, the structure shall remain untouched until the kit fox has vacated the structure; if necessary, the USFWS and CDFG shall be consulted.
- All food-related trash shall be disposed of in closed containers and removed from the construction site at a minimum of once per week.
- Prior to the first ground-disturbing activity, a qualified biologist shall conduct an employee education program for construction personnel. The education

program shall include a physical description of the kit fox, methods of impact avoidance, and points of contact should an impact occur or potentially occur. A fact sheet covering all of this information shall be provided to each employee.

- The applicant shall establish a point of contact for construction personnel in the event that a kit fox is accidentally injured or killed.
- Prior to ground-disturbing activities, the City shall retain a qualified biologist to conduct periodic inspections of the project site during construction to ensure compliance with the above measures.
- The CDFG shall be notified immediately and the Sacramento Fish and Wildlife office shall be notified within 3 days if a kit fox is injured or killed.

MM BIO-1e Prior to removal of any trees (including orchard and ornamental) or structures (barns) on the project site, the project applicant shall retain a qualified biologist to conduct presence/absence surveys for bat species. Bats shall not be disturbed during the breeding season (typically between May and August), or when using a winter hibernaculum (typically between November and February). If bats are found to be present in trees onsite, systematic removal of select tree branches would be required several days prior to the removal of the trees. This work shall be done under the supervision of a qualified biologist. If bats are found to be present in structures, partial removal of the roof shall be required within several days of building demolition. This work shall be conducted under the supervision of a qualified biologist.

Level of Significance After Mitigation

Less than significant impact.

Sensitive Natural Communities and Riparian Habitat

Impact BIO-2: The proposed project may have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game (CDFG) or the United States Fish and Wildlife Service (USFWS).

Impact Analysis

This impact assesses the potential for adverse impacts on riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFG or the USFWS.

West Patterson Business Park Expansion Project

The project site contains riparian habitat related to Del Puerto Creek, which is found in the northwestern portion of the proposed project site. This creek is a tributary of the San Joaquin River, and it is considered a water of the United States pursuant to the Clean Water Act and waters of the State pursuant to the Porter-Cologne Act. The proposed project would involve the construction of a

new crossing of Del Puerto Creek. As such, Mitigation Measure BIO-2 requires the project applicant to conduct a wetland delineation to determine the extent of jurisdictional features on the project site that meet federal or state definitions of wetlands and sensitive natural communities. (The delineation would be performed once the precise location of the proposed crossing is available.) In the event the delineation determines that such features are present and the proposed project would impact them, the project applicant will be required to secure the adequate regulatory permits and mitigate for the loss of such features at no less than a 1:1 ratio through either (1) offsite preservation of features of equal or greater value or (2) purchase of credits at an agency approved mitigation bank in the region. With the implementation of this mitigation measure, impacts would be less than significant.

Note that the proposed project would involve the construction of new crossings and the removal of existing crossings of the California Aqueduct and the Delta-Mendota Canal. Both of these waterways are concrete-lined, man-made features that are considered “upland” and are used for the specific purpose of conveying water to agricultural and urban users; these features are not considered waters of the United States or waters of the State.

Offsite Utility Alignments

Alignment 3 would parallel Lateral 6 South and Alignment 2 would parallel the Delta-Mendota Canal. As previously mentioned, none of these waterways contain riparian habitat, sensitive natural communities, or meet federal or state definitions of waters of the United States or waters of the State.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-2 Prior to issuance of grading permits for construction activities that would occur within 100 feet of Del Puerto Creek, the project applicant shall retain a qualified biologist to prepare and submit a Jurisdictional Delineation to the appropriate resource agencies for review and approval. Such agencies may include but are not limited to the United States Army Corps of Engineers, the California Department of Fish and Game, and the Central Valley Regional Water Quality Control Board. Should the approved Jurisdictional Delineation determine that the project would impact regulated resources, the applicant shall obtain the necessary regulatory permits and mitigate impacts through (1) avoidance of the resources; (2) offsite restoration of features of equal or greater value; or (3) purchase of credits at an agency-approved mitigation bank in the region at no less than a 1:1 ratio.

Level of Significance After Mitigation

Less than significant impact.

Federally Protected Wetlands

Impact BIO-3: The proposed project may have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Impact Analysis

This impact assesses the potential for adverse impacts on federally protected wetlands as defined by Section 404 of the Clean Water Act.

West Patterson Business Park Expansion Project

Del Puerto Creek, which flows through the northwest corner of the project site, contains and is abutted by hydrophytic plant species; there are potential associated wetlands that would be classified as waters of the United States pursuant to the Clean Water Act. The proposed project would involve the construction of a new roadway crossing of Del Puerto Creek. As such, Mitigation Measure BIO-2 requires the project applicant to conduct a wetland delineation to determine whether the project site contains features that meet federal definitions of wetlands. (The delineation would be performed once the precise location of the proposed crossing is available). If the delineation determines that such features are present, the project applicant will be required to mitigate for the loss of such features at no less than a 1:1 ratio through either (1) offsite preservation of features of equal or greater value or (2) purchase of credits at an agency approved mitigation bank in the region. With the implementation of this mitigation measure, impacts would be less than significant.

As mentioned previously, the proposed project would involve the construction of new crossings and the removal of existing crossings of the California Aqueduct and the Delta-Mendota Canal. Both of these waterways are concrete-lined, man-made features that are considered “upland” and are used for the specific purpose of conveying water to agricultural and urban users; these features are not considered waters of the United States or waters of the State.

Offsite Utility Alignments

Alignment 3 would parallel Lateral 6 South and Alignment 2 would parallel the Delta-Mendota Canal. As previously mentioned, none of these waterways contain wetlands or meet federal or state definitions of waters of the United States or waters of the State.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure BIO-2.

Level of Significance After Mitigation

Less than significant impact.

Wildlife or Fish Movement

Impact BIO-4: **The proposed project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites.**

Impact Analysis

This impact assesses the potential for adverse impacts on wildlife movement or the use of wildlife nursery sites.

West Patterson Business Park Expansion Project

The only potential wildlife movement corridor within the project is Del Puerto Creek. An approximately 3,100-lineal-foot reach of the creek is located within the project boundaries. This reach enters the project site through a double concrete box culvert beneath both I-5 and the California Aqueduct. From the culvert eastward, the waterway is largely contained within a natural channel. The Delta-Mendota Canal crosses under the creek via a siphon. Based on the characteristics of the waterway, it is suitable to be used by mammals, reptiles, and amphibians for movement, particularly under I-5.

As shown on Exhibit 2-5, the current alignment of Del Puerto Creek would be maintained by the project. However, the proposed project would involve the construction of a new crossing of Del Puerto Creek. To ensure that the proposed project would not adversely affect the wildlife movement corridor attributes of Del Puerto Creek, Mitigation Measure BIO-4 requires that a minimum 100-foot setback be maintained from the high water mark, or outside edge of existing riparian vegetation, whichever is greater, pursuant to City of Patterson General Plan Policy BIO-34. Mitigation Measure BIO-4 exempts stream crossings from this requirement, but it does require that they either completely span the channel where feasible or, where not feasible, footings must be located as far from the low-flow channel as feasible. With the implementation of this mitigation measure, impacts would be reduced to a level of less than significant.

Note that both the California Aqueduct and the Delta-Mendota Canal support fish. Aside from the construction of new crossings and the removal of existing crossings, the proposed project would not alter any aspects of these facilities. The new crossings would fully span both waterways and, therefore, would not have any impact on fish movement.

Offsite Utility Alignments

All three offsite utility alignments would be located underground. As such, none would have the potential to adversely affect wildlife movement or the use of wildlife nursery sites.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-4 Prior to recordation of the final map for the proposed project, the project applicant shall prepare and submit plans to the City of Patterson that demonstrate that physical improvements associated with the proposed project maintain a minimum 100-foot setback from the Del Puerto Creek high water mark, or outside edge of existing riparian vegetation, whichever is greater. Stream crossings are exempt from this setback requirement; however, they must either (1) completely span the creek channel, where feasible; or (2) where a span is not feasible, footings must be located as far away from the creek's low-flow channel as feasible. Utility improvements are also exempt from this setback requirement.

Level of Significance After Mitigation

Less than significant impact.

Conflicts With Local Biological Ordinances or Policies

Impact BIO-5: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Impact Analysis

This impact assesses the potential for conflicts with local policies or ordinances protecting biological resources.

West Patterson Business Park Expansion Project

The project site is not within the boundaries of a tree preservation, habitat conservation plan, or natural community conservation plan, thereby precluding the possibility of the proposed project conflicting with the provisions of such a plan.

City of Patterson General Plan Policy NR-3.2 outlines the protection of sensitive species that may be affected by the project. Mitigation Measures BIO-1a through BIO-1e, outlined above, would be implemented to ensure special-status species remain absent from the site, and that no animal would be harmed in the unlikely event an errant animal is found onsite prior to construction.

Further, the City of Patterson General Plan Policy NR-3.7 indicates that the "City shall preserve the ecological integrity of creek corridors, canals, and drainage ditches that support riparian resources." However, as mentioned previously and shown in Exhibit 2-4, the current alignment of Del Puerto Creek would be maintained by the project. In addition, by siting all of the proposed project's building envelopes away from the creek, and by implementing Mitigation Measure BIO-4—which requires that a minimum 100-foot setback be maintained from the creek high water mark or the outside edge of existing riparian vegetation, whichever is greater—any impacts to the ecological integrity within Del Puerto Creek would be minimized. With the implementation of these mitigation measures, impacts would be reduced to a level of less than significant.

Offsite Utility Alignments

As previously discussed, construction of any of the three utility alignments would require the implementation of Mitigation Measures BIO-1a and BIO-1d. As such, the implementation of these measures would mitigate impacts on special-status species, consistent with General Plan Policy NR-3.2.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1d, BIO-1e, BIO-2, and BIO-4.

Level of Significance After Mitigation

Less than significant impact.

3.5 - Cultural Resources

3.5.1 - Introduction

This section describes the existing cultural resources setting and potential effects from project implementation on the site and its surrounding area that are based on Phase I Cultural Resource Assessment Report prepared by Michael Brandman Associates. The complete report is provided in Appendix E.

3.5.2 - Environmental Setting

Overview

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

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

Cultural Setting

Prehistory

Early archaeological investigations in central California were conducted at sites located in the Sacramento-San Joaquin Delta region. The first published account documents investigations in the Lodi and Stockton area (Schenck and Dawson 1929). The initial archaeological reports typically contained descriptive narratives, with more systematic approaches sponsored by Sacramento Junior College in the 1930s. At the same time, University of California at Berkeley excavated several sites in the lower Sacramento Valley and Delta region, which resulted in recognizing archaeological site patterns based on variations of inter-site assemblages. Research during the 1930s identified temporal periods in central California prehistory and provided an initial chronological sequence. In 1939, Lillard noted that each cultural period led directly to the next and that influences spread from the Delta region to other regions in central California (Lillard, et al. 1939). In the late 1940s and early 1950s, Beardsley documented similarities in artifacts among sites in the San Francisco Bay region and the Delta and refined his findings into a cultural model that ultimately became known as the Central California Taxonomic System (CCTS). This system proposed a uniform, linear sequence of cultural succession (Beardsley 1948 and 1954). The CCTS system was challenged by Gerow, whose

work looked at radiocarbon dating to show that Early and Middle Horizon sites were not subsequent developments but, at least partially, contemporaneous (1954; 1974; Gerow with Force 1968).

To address some of the flaws in the CCTS system, another researcher introduced a revision that incorporated a system of spatial and cultural integrative units. Fredrickson separated cultural, temporal, and spatial units from each other and assigned them to six chronological periods: Paleo-Indian (10000 to 6000 B.C.); Lower, Middle and Upper Archaic (6000 B.C. to A.D. 500), and Emergent (Upper and Lower, A.D. 500 to 1800). The suggested temporal ranges are similar to earlier horizons, which are broad cultural units that can be arranged in a temporal sequence (Moratto 1984). In addition, Fredrickson defined several patterns—a general way of life shared within a specific geographical region. These patterns include:

- Windmill Pattern or Early Horizon (3000 to 1000 B.C.)
- Berkeley Pattern or Middle Horizon (1000 B.C. to A.D. 500)
- Augustine Pattern or Late Horizon (A.D. 500 to historic period)

Brief descriptions of these temporal ranges and their unique characteristics follow.

3.5.3 - Windmill Pattern or Early Horizon (3000 to 1000 B.C.)

Characterized by the Windmill Pattern, the Early Horizon was centered in the Cosumnes district of the Delta and emphasized hunting rather than gathering, as evidenced by the abundance of projectile points in relation to plant processing tools. Additionally, atlatl, dart, and spear technologies typically included stemmed projectile points of slate and chert but minimal obsidian. The large variety of projectile point types and faunal remains suggests exploitation of numerous types of terrestrial and aquatic species. Burials occurred in cemeteries and intra-village graves. These burials typically were ventrally extended, although some dorsal extensions are known with a westerly orientation and a high number of grave goods. Trade networks focused on acquisition of ornamental and ceremonial objects in finished form rather than on raw material. The presence of artifacts made of exotic materials such as quartz, obsidian, and shell indicates an extensive trade network that may represent the arrival of Utian populations into central California. Also indicative of this period are rectangular *Haliotis* and *Olivella* shell beads, and charmstones that usually were perforated.

3.5.4 - Berkeley Pattern or Middle Horizon (1000 B.C. to A.D. 500)

The Middle Horizon is characterized by the Berkeley Pattern, which displays considerable changes from the Early Horizon. This period exhibited a strong milling technology represented by minimally shaped cobble mortars and pestles, although metates and manos were still used. Dart and atlatl technologies during this period were characterized by non-stemmed projectile points made primarily of obsidian. One researcher suggests that the Berkeley Pattern marked the eastward expansion of Miwok groups from the San Francisco Bay Area. Compared with the Early Horizon, there is a higher proportion of grinding implements at this time, implying an emphasis on plant resources rather than on hunting. Typical burials occurred within the village with flexed positions, variable cardinal

orientation, and some cremations. The practice of spreading ground ochre over the burial was common at this time. Grave goods during this period are generally sparse and typically include only utilitarian items and a few ornamental objects. However, objects such as charmstones, quartz crystals, and bone whistles occasionally were present, which suggest the religious or ceremonial significance of the individual. During this period, larger populations are suggested by the number and depth of sites compared with the Windmill Pattern. One researcher opined that the Berkeley Pattern reflects gradual expansion or assimilation of different populations rather than sudden population replacement and a gradual shift in economic emphasis.

3.5.5 - Augustine Pattern or Late Horizon (A.D. 500 to Historic Period)

The Late Horizon is characterized by the Augustine Pattern, which represents a shift in the general subsistence pattern. Changes include the introduction of bow and arrow technology; and most importantly, acorns became the predominant food resource. Trade systems expanded to include raw resources as well as finished products. There are more baked clay artifacts and extensive use of *Haliotis* ornaments of many elaborate shapes and forms. Burial patterns retained the use of flexed burials with variable orientation, but there was a reduction in the use of ochre and widespread evidence of cremation. Judging from the number and types of grave goods associated with the two types of burials, cremation seems to have been reserved for individuals of higher status, whereas other individuals were buried in flexed positions. One researcher suggests that the Augustine Pattern represents expansion of the Wintuan population from the north, which resulted in combining new traits with those established during the Berkeley Pattern.

Central California research has expanded from an emphasis on defining chronological and cultural units to a more comprehensive look at settlement and subsistence systems. This shift is illustrated by the early use of burials to identify mortuary assemblages and more recent research using osteological data to determine the health of prehistoric populations. Although debate continues over a single model or sequence for central California, the general framework consisting of three temporal/cultural units is generally accepted, although the identification of regional and local variation is a major goal of current archaeological research.

Native American Background

At the time of European contact, the project vicinity was occupied by the Northern Valley Yokuts tribe of California Native Americans. This area of California is one of the least known ethnographically due to the significant effects of post-contact diseases, missionization, and the large influx of Euro-Americans into the area. The Northern Valley Yokuts occupied the northern San Joaquin Valley, with their territory extending along the San Joaquin River and its various tributaries and bounded by mountain ranges and foothills to the east and west. Northern Valley Yokuts territory extended approximately 120 miles north to south and 60 miles east to west. The northern boundary, where the territory meets that of the Plains Miwok, is not well defined because of discrepancies in the classification of some of the northern groups as Miwok or Yokuts. The southern boundary is

approximately where the San Joaquin River bends to the west, the eastern boundary lies near the base of the Sierra-Nevada foothills, and to the west, one the eastern-facing slopes of the Diablo Range. The Yokuts language form a part of the California Penutian language family, which includes Miwok, Costanoan, Maiduan, and Wintuan as well.

The Northern Valley Yokuts constructed villages on top of low mounds on or near the banks of large waterways, keeping them above typical flood levels. Their houses were round-to-oval dome-shaped, constructed of bent tule stalks, and then covered in tule stalks bent into mats. These structures typically had hard packed, subterranean dirt floors measuring 25-40 feet across. Other village structures, constructed in a semi-subterranean earth-covered style, were an assembly building for ceremonies and a sweathouse.

The Northern Valley Yokuts political organization was centered on miniature tribes of approximately 300 persons, with each being guided by a headman, and assisted by a messenger. Most members of a particular tribe lived within the same settlement, but smaller congregations of a few houses also existed outside of the main villages.

The Northern Valley Yokuts subsistence base varied and included gathering seasonal plant resources, hunting, and fishing. The Northern Valley Yokuts did not depend on one staple as their territory provided year-round sources of different foods. Living along waterways, fishing was an important activity, yielding king salmon, large white sturgeon, river perch, western suckers, and Sacramento pike. Fish were caught with the use of dragnets with stone sinkers, bone or antler tipped harpoons, and fishing from tule rafts. Fish were dried to preserve them for consumption later in the year, especially salmon, which would have been an abundant but seasonally available resource during annual runs. Hunting waterfowl such as geese and ducks also formed a major focus of hunting activities, with less effort being placed on hunting the large herds of elk and antelope that existed in the area. Acorns were an important food resource and were stored in granaries, later to be processed into meal, along with tule roots. In addition to collecting seeds and other plant resources, the Northern Valley Yokuts practiced the custom of burning the vegetation as a form of plant management to promote the growth of the next year's seed crop. The Northern Valley Yokuts raised dogs and are noted to have occasionally raised captured young animals as prized pets.

The Northern Valley Yokuts maintained a significant amount of trade with neighboring groups, traveling along waterways in tule boats in addition to overland routes. From Miwok groups, they traded dog pups in exchange for bows, arrows, and baskets, and received abalone and mussel shells from Costanoans. Traders journeyed as far as the Coast Range into Salinan territory, and made regular visits to the Monterey Bay.

Based on information from Miwok and other informants, some information has been put forth regarding the religious practices of the Northern Valley Yokuts. The Northern Valley Yokuts may have practiced rituals centered around the ingestion of datura, as well as participating in the Kuksu, two widespread

California ritual systems. Burials were conducted in the tradition of placing an individual into a flexed position or cremated, but beyond that, little is known about other burial practices.

Historic Background

The history of the northern Central Valley and Sierra Nevada foothills can be divided into several periods of influence; pertinent historic periods are briefly summarized below.

3.5.6 - Spanish Period

The arrival and expansion of the Spanish did not have much effect on the Northern Valley Yokuts way of life, as contact with the Spanish was very limited, with increasing contact after the Spanish began to venture inland to explore the delta and lower San Joaquin Valley. With the decline of native populations on the coast near Spanish settlements, beginning around 1805, Northern Valley Yokuts began to be removed and forced into the Spanish Mission system as neophytes at San José, Santa Clara, Soledad, San Juan Bautista, and San Antonio missions. Many Native Americans were not willing converts. There are numerous accounts of neophytes fleeing the missions, and a series of “Indian Wars” broke out when the Spanish tried to return them to the missions.

3.5.7 - Mexican Period

With the declaration of Mexican independence in 1821, Spanish control of Alta California ended, although little change actually occurred. Political change did not take place until mission secularization in 1834, when Native Americans were released from missionary control and the mission lands were granted to private individuals. Researchers believe that Mission secularization removed the social protection and support on which Native Americans had come to rely. It exposed them to further exploitation by outside interests, often forcing them into a marginal existence as laborers for large ranchos. Following mission secularization, the Mexican population grew as the native population continued to decline. Anglo-American settlers began to arrive in Alta California during this period and often married into Mexican families, becoming Mexican citizens, which made them eligible to receive land grants. In 1846, on the eve of the U.S.-Mexican War (1846 to 1848), the estimated population of Alta California was 8,000 non-natives and 10,000 natives. However, these estimates have been debated. It was estimated that the Native American population was 100,000 in 1850; the U.S. Census of 1880 reports the Native American population as 20,385.

3.5.8 - European Expansion

Jedediah Smith was the first to explore the Central Valley in 1828, but other fur-trapping expeditions soon followed. In the late 1820s, American trappers, as well as ones from the Hudson’s Bay Company, began establishing camps to trap beavers, an occupation that was said to have been peaceful. During this period, Native American populations were declining rapidly, due to an influx of Euro-American diseases. In 1832, a party of trappers from the Hudson’s Bay Company, led by John Work, traveled down the Sacramento River unintentionally spreading a malaria epidemic to Native Californians, killing thousands of the Northern Valley Yokuts. Four years later, a smallpox epidemic

decimated local populations, and it is estimated that up to 75 percent of the remaining native population died.

Captain John Sutter arrived the Sacramento area in 1839 after becoming a Mexican citizen and receiving permission from the governor of Alta California, Juan Bautista Alvarado, to establish a community that he named New Helvetica (roughly 44,000 acres in size), centered around Sutter's Fort. Sutter did not have many problems with the remaining Native Americans in the area, and eventually persuaded the Miwok peoples living along the Cosumnes River to move to the Fort where many of them became members of his army. In 1841, Sutter purchased Fort Ross from the Russian-American Company, expanding his landholdings to the Pacific Coast as well as the size of his private army. That same year, Alta California's governor, Manuel Micheltorena, issued the Sobrante Grant that expanded the territory of New Helvetica by another 88,000 acres. In 1848, as a result of the Treaty of Guadalupe Hidalgo, California became a United States territory.

After the upheaval of the Bear Flag Revolt in 1846 and the seizure of Northern California by the U.S. military, John Sutter sent James Marshall to construct a sawmill in the Sierra Nevada foothills (Severson 1973). In January of 1848, Marshall discovered gold near the Nisenan village of "Culloma," (currently Coloma) which marked the start of the Gold Rush. The influx of miners and entrepreneurs increased the population of California, not including Native Californians, from 14,000 to 224,000 in just 4 years. This, in turn, stimulated commercial growth in the Sacramento Valley as eager entrepreneurs set up businesses to support the miners and mining operations. When the Gold Rush was over, many miners settled in the area and established farms and ranches in the delta and valley territory of the Northern Valley Yokuts.

3.5.9 - History of Stanislaus County

The first non-native settlements in the area that would later become Stanislaus County were Mexican land grants. In 1843, Mexican Governor Manuel Micheltorena, granted land to Valentin Higuera and Rafael Feliz (Rancho Pescadero), and also Francisco Rica and Jose Castro (Rancho del Rio Estanislao). Two additional grants were extended in 1844, to Mariano Hernandez (Rancho del Puerto), and Sebastian Nunez (Rancho Orestimba).

Among the first Euro-American settlers in the area was a group of Mormons who traveled from New York in 1846, led by their prophet Samuel Brannan to find a place in the Mexican territory where they could practice their religion. Eventually, they settled near the junction of the Stanislaus and San Joaquin rivers, near present-day Salida, forming the settlement of New Hope. This group established a sawmill, enclosed 80 acres, and planted wheat and vegetables. When Brigham Young founded the Mormon colony in Utah, many of these settlers left for Utah and also for the gold fields of the Sierra Nevada. Later arrivals, especially after the Gold Rush began, settled in the area to raise sheep, cattle, and horses, in addition to planting crops.

Until 1854, Stanislaus formed part of Tuolumne County, with a portion of San Joaquin County annexed to Stanislaus County in 1860. In 1854, the county seat was in Adamsville, moved to Empire City, then moved to La Grange in 1855 until 1862, when it was moved to Knights Ferry. In 1871, the county seat was moved to Modesto, where it resides today.

3.5.10 - City of Patterson

The City of Patterson is within the former, approximately 20,000-acre Rancho del Puerto land grant, which was purchased by John D. Patterson in 1866. In 1854, Patterson traveled to California, bringing with him purebred Spanish Merino sheep, and began raising sheep, shorthorn cattle, and racing horses. With the news that the Southern Pacific Railroad would run along the west side of the San Joaquin Valley, Patterson (or perhaps Simon Newman) placed a siding for the railroad within the limits of the present location of the City, and Newman built a grain storage warehouse along the railroad track. John Patterson died in 1902 and his heirs eventually established the Patterson Ranch Company in 1908. Thomas W. Patterson subdivided the land into smaller ranches and laid out the design for the colony of Patterson with a grand vision of a series of circles and radiating streets, modeled after the large cities in the eastern United States and Europe, lined with palms, eucalyptus, and sycamore trees. In 1909, Patterson filed the map with the Stanislaus County recorder's office and began selling lots, eventually leading to the town's incorporation in 1919.

The City of Patterson's population was estimated to be 20,560 as of January 1, 2011 by the California Department of Finance. Agriculture continues to be its primary economic base and land surrounding Patterson is planted with apricots, peaches, almonds, and walnuts, as well as row crops of dry beans, tomatoes, broccoli, and melons. Despite its rural setting, Patterson's geographic location is considered strategic for commercial and industrial enterprises due to its location on Interstate 5 and its proximity to the San Francisco Bay Area and Sacramento metropolitan area.

3.5.11 - Regulatory Framework

Federal

National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA), as amended, established the National Register of Historic Places (NRHP), which contains an inventory of the nation's significant prehistoric and historic properties. Under 36 CFR 60, a property is recommended for possible inclusion on the NRHP if it is at least 50 years old, has integrity, and meets one of the following criteria:

- It is associated with significant events in history, or broad patterns of events.
- It is associated with significant people in the past.

- It embodies the distinctive characteristics of an architectural type, period, or method of construction; or it is the work of a master or possesses high artistic value; or it represents a significant and distinguishable entity whose components may lack individual distinction.
- It has yielded, or may yield, information important in history or prehistory.

Certain types of properties are usually excluded from consideration for listing in the NRHP, but they can be considered if they meet special requirements in addition to meeting the criteria listed above. Such properties include religious sites, relocated properties, graves and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

State

California Register of Historical Resources

As defined by Section 15064.5(a)(3)(A-D) of the CEQA Guidelines, a resource shall be considered historically significant if the resource meets the criteria for listing on the California Register of Historical Resources (CR). The California Register of Historical Resources and many local preservation ordinances have employed the criteria for eligibility to the NRHP as a model, since the NHPA provides the highest standard for evaluating the significance of historic resources. A resource that meets the NRHP criteria is clearly significant. In addition, a resource that does not meet the NRHP standards may still be considered historically significant at a local or state level.

California Environmental Quality Act

The CEQA Guidelines state that a resource need not be listed on any register to be found historically significant. The CEQA guidelines direct lead agencies to evaluate archaeological sites to determine if they meet the criteria for listing in the California Register. If an archaeological site is a historical resource, in that it is listed or eligible for listing in the California Register, potential adverse impacts to it must be considered. If an archaeological site is considered not to be an historical resource but meets the definition of a “unique archeological resource” as defined in Public Resources Code Section 21083.2, then it would be treated in accordance with the provisions of that section.

Local

City of Patterson

General Plan

The City of Patterson General Plan sets forth several goals and policies relevant to cultural resources:

- **Goal PR-5:** To protect Patterson’s Native American heritage.
- **Policy PR-5.1:** Review of development. The City shall refer development proposals that may adversely affect archaeological sites to the California Archaeological Inventory, Central California Information Center, at California State University, Stanislaus, for review and comment.

- **Policy PR-5.2:** Native American consultation requirements. The City shall continue to comply with the requirements Government Code Sections 65352.3 and 65352.4 which require the City to 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.
- **Policy PR-5.3:** Mandatory avoidance of impacts. The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting with applicable State and local agencies and organizations, conducting a site evaluation as may be indicated, and mitigating any adverse impacts according to the recommendations of a qualified archaeologist. City implementation of this policy shall be guided by Appendix K of the State CEQA Guidelines.
- **Policy PR-5.4:** Protection of Native American cultural sites. The City shall ensure the protection of archaeological sites that may be culturally significant to Native Americans, even if they have lost their scientific or archaeological integrity through previous disturbance; sites that may have religious value, even though no artifacts are present; and sites that contain artifacts which may have intrinsic value, even though their archaeological context has been disturbed.
- **Goal PR-6:** To protect the area's archaeological resources.
- **Policy PR-6.1:** Protection of archaeological resources. The City shall provide for the protection of both known and potential archaeological resources. To avoid significant damage to important archaeological sites, all available measures, including purchase of the property in fee or easement, shall be explored at the time of a development proposal. Where such measures are not feasible and development would adversely affect identified archaeological or paleontological resources, mitigation shall be required in accordance with the relevant provisions of federal and State laws.
- **Policy PR-6.2:** Archaeologically sensitive areas. Development within an archaeologically sensitive area shall require a preliminary site survey by a qualified archaeologist knowledgeable in Native American cultures, prior to a determination of the potential environmental impacts of the project.
- **Policy PR-6.3:** Archaeological resources present. Where a preliminary site survey finds substantial archaeological resources, before permitting construction, the City shall require a mitigation plan to protect the resources. Possible mitigation measures include:
 - Requiring the presence of a qualified professional during initial grading or trenching; project redesign;
 - Covering with a layer of fill; excavation, removal and curation in an appropriate facility under the direction of a qualified professional.
- **Policy PR-6.4:** Qualified archaeologist present. Where substantial archaeological resources are discovered during construction or grading activities, all such activities in the immediate area of the find shall cease until a qualified archaeologist knowledgeable in Native American cultures can determine the significance of the resource and recommend alternative mitigation measures.

- **Policy PR-6.5:** Archaeological site records. The City shall establish and maintain archaeological site records about known sites. Specific archaeological site information shall be kept confidential to protect the resources. The City shall maintain, for public use, generalized maps showing known areas of archaeological sensitivity.

3.5.12 - Methodology

This section is based the information contained in the Phase I Cultural Resources Assessment, West Patterson Business Park Expansion Project, City of Patterson, prepared by Michael Brandman Associates, October 2011. The report is provided in its entirety in Appendix E. Below is a summary of the investigation.

Record Searches

Central California Information Center (CCIC) Record Search

On August 31, 2011, staff at the CCIC conducted a records search (CCIC File #8044 N) to identify previously recorded historic resources within the project area and a 0.25-mile radius. To identify any historic properties or resources, the current inventories of the National Register of Historic Places (NRHP), the California Register of Historic Resources (CR), the California Historical Landmarks (CHL) list, the California Points of Historical Interest (CPHI) list, and the California State Historic Resources Inventory (HRI) were reviewed to determine the existence of previously documented local historical resources.

The results of the records search indicated that 11 previous investigations have been conducted within the project area and five investigations were conducted within a 0.25-mile radius of the project area. In addition, three historic resources have been recorded within the project area: segments or points on the California Aqueduct, segments, or points on the Delta-Mendota Canal, and four pieces of historic farm equipment. One prehistoric isolate (a worked flake) was recorded within 0.25-mile radius of the project area.

Native American Heritage Commission Record Search

On August 29, 2011, MBA sent a letter to the Native American Heritage Commission (NAHC) in an effort to determine whether any sacred sites are listed on its Sacred Lands File for the project area. The response from the NAHC was received on September 8, 2011, and it noted that the search failed to indicate the presence of Native American cultural resources in the immediate project area. A list of five Native American tribal members who may have additional knowledge of the project area was included with the results. Letters were sent to the five tribal members on September 26, 2011, requesting any additional information they might have concerning the project area. As of this date, no responses requesting further consultation and/or information have been received from any of the tribal members.

Paleontological Resources

Although no paleontological resources were observed during the field survey, Pleistocene alluvium is ranked as highly sensitive for significant paleontologic resources. Although MBA does not feel that a paleontological survey is warranted, there is the possibility of project excavations impacting significant paleontological resources if project excavations extend 10 feet below the ground surface.

Pedestrian Survey

MBA's Senior Project Archaeologist Carrie D. Wills and Project Archaeologist David R. Cohen surveyed the project area on September 8, 2011. The project area was surveyed by walking the dry creek, unimproved dirt roads, orchard rows, and cleared areas that traverse the project boundary. The ground surface visibility was consistently poor, due to stone-fruit orchards, row crops, and grasses covering the ground surface in much of the project area, and, typically, the only area where there was visible ground surface was within the dirt roads and other small clearings. The pedestrian survey was therefore limited by these conditions.

The project area consisted of relatively flat agricultural land, with some steeper topography at the western project boundary that rises to the California Aqueduct and the Diablo Range. The project area is traversed by the California Aqueduct and the Delta Mendota Canal. In addition, the project area is covered with varying densities of grass cover, weeds, and trees. Near the northwestern portion of the project area is Del Puerto Creek, which extends in a northeast and southwest direction, and special attention was focused on looking for cultural resources in this area during the survey. In addition, the residence near the Delta Mendota Canal was given specific attention to ascertain its potential as a historic resource. The visual assessment of the residence led to the conclusion that the residence does not appear to meet the minimum age requirement (45 years) for recording. The southern portion of the project area south of the Turlock Irrigation District Sub-Station was unable to be surveyed because of heavy planting of tomatoes. In addition, although every attempt was made to find the four pieces of farm equipment, they were not found during the course of the survey. Since the pieces of equipment were recorded over 20 years ago, it is not surprising that they are no longer at the recorded location.

3.5.13 - Thresholds of Significance

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

- a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?
- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

- c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
- d) Disturb any human remains, including those interred outside of formal cemeteries?

3.5.14 - Project Impacts and Mitigation Measures

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

Historic Resources

Impact CUL-1:	Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered historic resources.

Impact Analysis

This impact will address the proposed project's potential have a substantial adverse effect on historic resources.

West Patterson Business Park Expansion Project

Three historic resources have been recorded within the project area: segments or points on the California Aqueduct, segments, or points on the Delta-Mendota Canal, and four pieces of historic farm equipment. One prehistoric isolate (a worked flake) was recorded within 0.25-mile radius of the project area. None of the resources would be impacted by project development. No additional historic resources were encountered during the field survey. However, subsurface construction activities associated with the proposed project, such as trenching and grading, could potentially damage or destroy previously undiscovered historic resources. Accordingly, this is a potentially significant impact. Mitigation Measure CUL-1 is proposed to reduce this potentially significant impact to a level of less than significant.

Offsite Utility Alignments

Development of any of the three utility alignments would involve subsurface excavation activities that could potentially damage or destroy previously undiscovered historic resources. As such, Mitigation Measure CUL-1 would apply to the development of any of the three alignments.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-1 If a potentially significant cultural resource is encountered during subsurface earthwork activities for the project, all construction activities within a 50-foot radius of the find shall cease until a qualified archaeologist determines whether the resource requires further study. The applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction shall be evaluated for

significance in terms of California Environmental Quality Act criteria by a qualified archaeologist and if significant, recorded on appropriate California Department of Parks and Recreation forms. Potentially significant cultural resources consist of but are not limited to stone, bone, glass, ceramics, fossils, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites. If the resource is determined significant under CEQA, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive report and file it with the appropriate Information Center, and provide for the permanent curation of the recovered materials.

Level of Significance After Mitigation

Less than significant impact.

Archaeological Resources

Impact CUL-2: **Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered archaeological resources.**

This impact will address the proposed project's potential have a substantial adverse effect on archaeological resources.

West Patterson Business Park Expansion Project

No archaeological resources have been previously recorded within the project site, nor were any encountered during the field survey. However, subsurface construction activities associated with the proposed project, such as trenching and grading, could potentially damage or destroy previously undiscovered archaeological resources. Accordingly, this is a potentially significant impact. Mitigation Measure CUL-1 is proposed to reduce this potentially significant impact to a level of less than significant.

Offsite Utility Alignments

Development of any of the three utility alignments would involve subsurface excavation activities that could potentially damage or destroy previously undiscovered archaeological resources. As such, Mitigation Measure CUL-1 would apply to the development of any of the three alignments.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure CUL-1.

Level of Significance After Mitigation

Less than significant impact.

Paleontological Resources

Impact CUL-3: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered paleontological resources.

Impact Analysis

This impact will address the proposed project's potential have a substantial adverse effect on paleontological resources.

West Patterson Business Park Expansion Project

Although no paleontological resources were observed during the field survey, Pleistocene alluvium is ranked as highly sensitive for significant paleontologic resources. Although a paleontological survey is not warranted, there is the possibility of project excavations that occur 10 feet or more below ground surface may impact significant paleontological resources. As such, Mitigation Measure CUL-3 requires the implementation of examination and recovery procedures in the event fossils and other paleontological resources are encountered during construction. With the implementation of this mitigation measure, impacts would be reduced to a level of less than significant.

Offsite Utility Alignments

Development of any of the three utility alignments would involve subsurface excavation activities that may occur 10 or more feet below ground surface that could potentially damage or destroy previously undiscovered paleontological resources. As such, Mitigation Measure CUL-3 would apply to the development of any of the three alignments.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-3 In the event a fossil or fossil formations are discovered during any subsurface construction activities for the proposed project, all excavations within 100 feet of the find shall be temporarily halted until the find is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards. The paleontologist shall notify the City of Patterson, who shall coordinate with the paleontologist concerning any necessary investigation of the find. If the find is determined to be significant under CEQA, the City, based on the recommended mitigation measures of the qualified paleontologist, shall require the applicant to implement those measures, which may include avoidance, preservation in place, or other appropriate measures, as outlined in Public Resources Code Section 21083.2.

Level of Significance After Mitigation

Less than significant impact.

Human Remains

Impact CUL-4: **Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered human remains.**

This impact will address the proposed project's potential have a substantial adverse effect on human remains.

West Patterson Business Park Expansion Project

Subsurface construction activities associated with the proposed project, such as trenching and grading, could potentially damage or destroy previously undiscovered human remains. Accordingly, this is a potentially significant impact. Mitigation Measure CUL-4 is proposed to reduce this potentially significant impact to a level of less than significant.

Offsite Utility Alignments

Development of any of the three utility alignments would involve subsurface excavation activities that could potentially damage or destroy previously undiscovered human remains. As such, Mitigation Measure CUL-4 would apply to the development of any of the three alignments.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-4 In the event of the accidental discovery or recognition of any human remains, all activities must cease within 50 feet of the find and the following procedures shall be implemented, as applicable:

1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the Stanislaus County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains to be Native American, the coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work within 48 hours, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.
2. Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the

recommendations of the most likely descendant or on the project site in a location not subject to further subsurface disturbance:

- The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission.
- The descendant identified fails to make a recommendation.
- The landowner or his authorized representative rejects the recommendation of the descendant, and mediation by the NAHC fails to provide measures acceptable to the landowner.

Level of Significance After Mitigation

Less than significant impact.

3.6 - Geology, Soils, and Seismicity

3.6.1 - Introduction

This section describes the existing geology, soils, and seismicity setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on the City of Patterson General Plan EIR, the West Patterson Projects Final EIR, and information provided by the Natural Resources Conservation Service's Web Soil Survey.

3.6.2 - Environmental Setting

Regional Geology

The City of Patterson is located in the Great Valley Geomorphic Province of California, commonly referred to as the San Joaquin Valley. The San Joaquin Valley consists of alluvial fans extending from the Sierra Nevada Range to the east, the Coastal Range to the west, and the Tehachapi Mountains to the south. Weathering of these mountain ranges combined with surface water flows and flooding have resulted in the accumulation of alluvial (river), lacustrine (lake), and marine (ocean) deposits throughout the San Joaquin Valley. Patterson is located on the western side of the San Joaquin Valley at the base of the Diablo Range foothills. As indicated by the City of Patterson General Plan Update EIR, landforms range from ancient pre-Quaternary and early Pleistocene hills and alluvial fans along the western boundary, to Middle and Late Holocene alluvial fans and terraces further east, to latest Holocene terraces along the San Joaquin River and Del Puerto Creek. Soils are largely alluvial in origin, particularly east of Interstate 5 (I-5). Most alluvial soils are derived from the Coast Range alluvial fans with the exception of areas near the San Joaquin River.

Seismicity

The term seismicity describes the effects of seismic waves that are radiated from an earthquake as it ruptures. While most of the energy released during an earthquake results in the permanent displacement of the ground, as much as 10 percent of the energy may dissipate immediately in the form of seismic waves. The probability of one or more earthquakes of magnitude 6.7 (Richter scale) or higher occurring in the project area has been evaluated by the United States Geological Survey (USGS). Based on the results of the USGS evaluation, there is a 62-percent likelihood that such an earthquake event will occur in the Bay Area by 2032. The faults with the greater probability of movement with a magnitude of 6.7 or higher earthquake are the Hayward Fault at 27 percent, the San Andreas Fault at 21 percent, and the Calaveras Fault at 11 percent. To understand the implications of seismic events, a discussion of faulting and seismic hazards is provided below.

Faulting

Faults form in rocks when stresses overcome the internal strength of the rock, resulting in a fracture. Large faults develop in response to large, regional stresses operating over a long time, such as those stresses caused by the relative displacement between tectonic plates. According to the elastic rebound theory, these stresses cause strain to build up in the earth's crust until enough strain has built up to

exceed the strength along a fault and cause a brittle failure. The slip between the two stuck plates or coherent blocks generates an earthquake. Following an earthquake, strain will build once again until the occurrence of another earthquake. The magnitude of slip is related to the maximum allowable strain that can be built up along a particular fault segment. The greatest buildup in strain that is due to the largest relative motion between tectonic plates or fault blocks over the longest period of time will generally produce the largest earthquakes. The distribution of these earthquakes is a study of much interest for both hazard prediction and the study of active deformation of the earth's crust.

Deformation is a complex process, and strain caused by tectonic forces is not only accommodated through faulting but also by folding, uplift, and subsidence, which can be gradual or in direct response to earthquakes.

Faults are mapped to determine earthquake hazards, since they occur where earthquakes tend to recur. A historic plane of weakness is more likely to fail under stress and strain than a previously unbroken block of crust. Faults are, therefore, a prime indicator of past seismic activity, and faults with recent activity are presumed to be the best candidates for future earthquakes. However, since slip is not always accommodated by faults that intersect the surface along traces, and since the orientation of stresses and strain in the crust can shift, predicting the location of future earthquakes is complicated. Earthquakes sometimes occur in areas with previously undetected faults or along faults previously thought inactive.

According to the City of Patterson General Plan EIR, the San Andreas, Hayward, San Joaquin, Calaveras, Green Valley-Concord, Midland, Patterson Pass, and Tesla-Ortigliata faults are active faults close to Patterson.

Seismic Hazards

Seismicity describes the effects of seismic waves that are radiated from an earthquake as it ruptures. While most of the energy released during an earthquake results in the permanent displacement of the ground, as much as 10 percent of the energy may dissipate immediately in the form of seismic waves. To understand the implications of seismic events, a discussion of faulting and seismic hazards is provided below.

Seismic hazards pose a substantial danger to property and human safety and are present because of the risk of naturally occurring geologic events and processes impacting human development. Therefore, the hazard is influenced as much by the conditions of human development as by the frequency and distribution of major geologic events. Seismic hazards present in California include ground rupture along faults, strong seismic shaking, liquefaction, ground failure, landsliding, and slope failure.

Fault Rupture

Fault rupture is a seismic hazard that affects structures sited above an active fault. The hazard from fault rupture is the movement of the ground surface along a fault during an earthquake. Typically,

this movement takes place during the short time of an earthquake, but it also can occur slowly over many years in a process known as creep. Most structures and underground utilities cannot accommodate the surface displacements of several inches to several feet commonly associated with fault rupture or creep.

Areas at risk for fault rupture are typically identified as Alquist-Priolo Earthquake Fault Zones. There are no Alquist-Priolo Earthquake Fault Zones within or adjacent to the City of Patterson.

Ground Shaking

The severity of ground shaking depends on several variables such as earthquake magnitude, epicenter distance, local geology, thickness, seismic wave-propagation properties of unconsolidated materials, groundwater conditions, and topographic setting. Ground shaking hazards are most pronounced in areas near faults or with unconsolidated alluvium.

Based on observations of damage from recent earthquakes in California (e.g., San Fernando 1971, Whittier-Narrows 1987, Landers 1992, Northridge 1994), ground shaking is responsible for 70 to 100 percent of all earthquake damage. The most common type of damage from ground shaking is structural damage to buildings, which can range from cosmetic stucco cracks to total collapse. The overall level of structural damage from a nearby large earthquake would likely be moderate to heavy, depending on the characteristics of the earthquake, the type of ground, and the condition of the building. Besides damage to buildings, strong ground shaking can cause severe damage from falling objects or broken utility lines. Fire and explosions are also hazards associated with strong ground shaking.

While Richter magnitude provides a useful measure of comparison between earthquakes, the moment magnitude is more widely used for scientific comparison since it accounts for the actual slip that generated the earthquake. Actual damage is due to the propagation of seismic or ground waves as a result of initial failure, and the intensity of shaking is as much related to earthquake magnitude as is the condition of underlying materials. Loose materials tend to amplify ground waves, while hard rock can quickly attenuate them, causing little damage to overlying structures. For this reason, the Modified Mercalli Intensity (MMI) Scale provides a useful qualitative assessment of ground shaking. The MMI Scale is a 12-point scale of earthquake intensity based on local effects experienced by people, structures, and earth materials. Each succeeding step on the scale describes a progressively greater amount of damage at a given point of observation. The MMI Scale is shown in Table 3.6-1, along with relative ground velocity and acceleration.

Table 3.6-1: Modified Mercalli Intensity Scale

Richter Magnitude	Modified Mercalli Intensity	Effects	Average Peak Ground Velocity (centimeters/seconds)	Average Peak Acceleration
0.1–0.9	I	Not felt. Marginal and long-period effects of large earthquakes	—	—
1.0–2.9	II	Felt by only a few persons at rest, especially on upper floors of building. Delicately suspended objects may swing.	—	—
3.0–3.9	III	Felt quite noticeable in doors, especially on upper floors of building, but many people do not recognize it as an earthquake. Standing cars may rock slightly. Vibration like passing a truck. Duration estimated.	—	0.0035–0.007 g
4.0–4.5	IV	During the day, felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make creaking sound. Sensations like heavy truck striking building. Standing cars rocked noticeably.	1–3	0.015–0.035 g
4.6–4.9	V	Felt by nearly everyone, many awakened. Some dishes, windows, broken; cracked plaster in a few places; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.	3–7	0.035–0.07 g
5.0–5.5	VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of falling plaster and damaged chimneys. Damage slight.	7–20	0.07–0.15 g
5.6–6.4	VII	Everyone runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well built, ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving cars.	20–60	0.15–0.35 g
6.5–6.9	VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures.	60–200	0.35–0.7 g

Table 3.6-1 (cont.): Modified Mercalli Intensity Scale

Richter Magnitude	Modified Mercalli Intensity	Effects	Average Peak Ground Velocity (centimeters/seconds)	Average Peak Acceleration
6.5–6.9 (cont.)	VIII	Fall of chimneys, factory stacks, columns, monument walls, and heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving in cars disturbed.	60–200	0.35–0.7 g
7.0–7.4	IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	200–500	0.7–1.2 g
7.5–7.9	X	Some well-built structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Railway lines bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed, slopped over banks.	≥ 500	>1.2 g
8.0–8.4	XI	Few, if any masonry structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	—	—
≥ 8.5	XII	Total damage. Waves seen on ground. Lines of sight and level distorted. Objects thrown into the air.	—	—

Source: United States Geologic Survey.

Ground Failure

Ground failure includes liquefaction and the liquefaction-induced phenomena of lateral spreading, and lurching.

Liquefaction is a process by which sediments below the water table temporarily lose strength during an earthquake and behave as a viscous liquid rather than a solid. Liquefaction is restricted to certain geologic and hydrologic environments, primarily recently deposited sand and silt in areas with high groundwater levels. The process of liquefaction involves seismic waves passing through saturated

granular layers, distorting the granular structure, and causing the particles to collapse. This causes the granular layer to behave temporarily as a viscous liquid, resulting in liquefaction.

Liquefaction can cause the soil beneath a structure to lose strength, which may result in the loss of foundation-bearing capacity. This loss of strength commonly causes the structure to settle or tip. Loss of bearing strength can also cause light buildings with basements, buried tanks, and foundation piles to rise buoyantly through the liquefied soil.

Lateral spreading is lateral ground movement, with some vertical component, caused by liquefaction. In effect, the soil rides on top of the liquefied layer. Lateral spreading can occur on relatively flat sites with slopes less than 2 percent, under certain circumstances, and can cause ground cracking and settlement.

Lurching is the movement of the ground surface toward an open face when the soil liquefies. An open face could be a graded slope, stream bank, canal face, gully, or other similar feature.

The City of Patterson General Plan EIR indicates that Patterson is theoretically subject to liquefaction resulting from earthquakes on several faults. The expected degree of earthquake-caused shaking, however, is relatively low, and it is unlikely that significant liquefaction would occur.

Landslides and Slope Failure

Landslides and other forms of slope failure form in response to the long-term geologic cycle of uplift, mass wasting, and disturbance of slopes. Mass wasting refers to a variety of erosional processes from gradual downhill soil creep to mudslides, debris flows, landslides and rock fall—processes that are commonly triggered by intense precipitation, which varies according to climactic shifts. Often, various forms of mass wasting are grouped together as landslides, which are generally used to describe the downhill movement of rock and soil.

Geologists classify landslides into several different types that reflect differences in the type of material and type of movement. The four most common types of landslides are translational, rotational, earth flow, and rock fall. Debris flows are another common type of landslide similar to earth flows, except that the soil and rock particles are coarser. Mudslide is a term that appears in non-technical literature to describe a variety of shallow, rapidly moving earth flows.

The City of Patterson and its surrounding areas are generally level, precluding the occurrence of landslides. The project site contains mostly flat relief, although both the California Aqueduct and I-5 sit upon raised embankments that are approximately 50 feet higher in elevation than the rest of the site. The Delta-Mendota Canal is also located within raised embankments.

Soils

The United States Department of Agriculture Soil Conservation Service indicates that multiple soil types underlie the project site. The soil properties are summarized in Table 3.6-2. A soil map is provided in Exhibit 3.2-2 in Section 3.2, Agricultural Resources.

Table 3.6-2: Soil Properties Summary

Soil Name	Surface Texture	Hydrologic Group	Drainage Class
Capay clay	Clay, 0 to 2% slopes	Group D - Slow infiltration rate (high runoff potential) when thoroughly wet. Consists chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.	Moderately well drained
Stomar	Clay loam, 0 to 2% slopes	Group C - Slow infiltration rate when thoroughly wet. Consists chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.	Well drained
Zacharias	Clay loam, 0 to 2% slopes	Group B—Moderate infiltration rate (medium runoff potential) when thoroughly wet. Moderately deep or deep, moderately well drained or well-drained soil.	Well drained
	Gravelly clay loam, 0 to 2% slopes	Group B—Moderate infiltration rate (medium runoff potential) when thoroughly wet. Moderately deep or deep, moderately well drained or well-drained soil.	Well drained
	Gravelly clay loam, 2 to 5% slopes	Group B—Moderate infiltration rate (medium runoff potential) when thoroughly wet. Moderately deep or deep, moderately well drained or well-drained soil.	Well drained

Table 3.6-2 (cont.): Soil Properties Summary

Soil Name	Surface Texture	Hydrologic Group	Drainage Class
Zacharias	Gravelly clay loam, 0 to 2% slopes, rarely flooded	Group B—Moderate infiltration rate (medium runoff potential) when thoroughly wet. Moderately deep or deep, moderately well drained or well-drained soil.	Well drained
Cortina	Gravelly sandy loam, 0 to 5% slopes, rarely flooded	Group B—Moderate infiltration rate (medium runoff potential) when thoroughly wet. Moderately deep or deep, moderately well drained or well-drained soil.	Somewhat excessively drained
Calla-Carbona complex	30 to 50% slopes	Group B—Moderate infiltration rate (medium runoff potential) when thoroughly wet. Moderately deep or deep, moderately well drained or well-drained soil.	Well drained
Elsalado	Fine sandy loam, 0 to 2% slopes, rarely flooded	Group B—Moderate infiltration rate (medium runoff potential) when thoroughly wet. Moderately deep or deep, moderately well drained or well-drained soil.	Well drained
Source: Natural Resources Conservation Service, 2011.			

3.6.3 - Regulatory Framework

Federal

Federal Earthquake Hazards Reduction Act

In 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program. The act established the National Earthquake Hazards Reduction Program (NEHRP). The National Earthquake Hazards Reduction Program Act (NEHRPA) significantly amended this program in 1990 by refining the description of the agency responsibilities, program goals, and objectives.

NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The NEHRPA designates

the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Other NEHRPA agencies include the National Institute of Standards and Technology, National Science Foundation and the USGS.

United States Uniform Building Code

The United States Uniform Building Code (UBC) provides site development and construction standards. The UBC is widely used throughout the United States, and is generally adopted on a district-by-district or state-by-state basis. The UBC has been modified for California conditions with more detailed and more stringent regulations; refer to the discussion of the California Building Standards Code.

State

California Building Standards Code

The California Building Standards Code establishes building requirements for construction and renovation. The most recent version of the California Building Standards Code was adopted in 2010 by the California Building Standards Commission and took effect January 1, 2011, and it is based on the International Code Council's Building and Fire Codes. Included in the California Building Standards Code are the Electrical Code, Mechanical Code, Plumbing Code, Energy Code, and Fire Code.

The State of California provides minimum standards for building design through the California Building Standards Code (California Code of Regulations, Title 24). Where no other building codes apply, Chapter 29 regulates excavation, foundations, and retaining walls. Finally, the 2010 California Building Standards Code regulates grading activities, including drainage and erosion control and construction on unstable soils, such as expansive soils and areas subject to liquefaction.

California Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act of 1990 (California Public Resources Code Section 1690-2699.6) addresses seismic hazards other than surface rupture, such as liquefaction and induced landslides. The Seismic Hazards Mapping Act specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

Alquist-Priolo Earthquake Fault Zoning Act

In response to the severe fault rupture damage of structures by the 1971 San Fernando earthquake, the State of California enacted the Alquist-Priolo Earthquake Fault Zoning Act in 1972. This act required the State Geologist to delineate Earthquake Fault Zones along known active faults that have a relatively high potential for ground rupture. Faults that are zoned under the Alquist-Priolo Act must meet the strict definition of being "sufficiently active" and "well-defined" for inclusion as an Earthquake Fault Zones. The Earthquake Fault Zones are revised periodically, and they extend 200 to 500 feet on either side of identified fault traces. No structures for human occupancy may be built

across an identified active fault trace. An area of 50 feet on either side of an active fault trace is assumed to be underlain by the fault, unless proven otherwise. Proposed construction in an Earthquake Fault Zone is permitted only following the completion of a fault location report prepared by a California Registered Geologist.

Local

City of Patterson

General Plan

The City of Patterson General Plan sets forth the following goal and policies relevant to geology, soils, and seismicity:

- **Goal HS-1:** To prevent loss of life, injury, and property damage due to geologic and seismic hazards.
- **Policy HS-1.1:** Geotechnical reports. The City shall require the preparation of geotechnical reports and impose appropriate mitigation measures to ensure, within the limits of technical and economic feasibility, that new structures are able to withstand the effects of seismic activity, including liquefaction, slope instability, expansive soils or other geologic hazards.
- **Policy HS-1.2:** Seismic resistant utilities. Underground utilities, particularly water and natural gas mains, shall be designed to withstand seismic forces in accordance with state requirements.

3.6.4 - Methodology

Michael Brandman Associates evaluated potential impacts on geology, soils, and seismicity through review of the City of Patterson General Plan EIR, seismic hazard mapping, and the Natural Resources Conservation Service's Web Soil Survey.

3.6.5 - Thresholds of Significance

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

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:
 - i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
 - ii. Strong seismic ground shaking?
 - iii. Seismic-related ground failure, including liquefaction?
 - iv. Landslides?

- b) Result in substantial soil erosion or the loss of topsoil?
- c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
- d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?
- e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (Refer to Section 7, Effects Found Not To Be Significant.)

3.6.6 - Project Impacts and Mitigation Measures

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

Seismic Hazards

Impact GEO-1:	Development of the proposed project may expose persons or structures to seismic hazards.

Impact Analysis

This impact evaluates potential exposure of the West Patterson Business Park project site to seismic hazards, including fault rupture, strong ground shaking, ground failure and liquefaction, and landslides.

West Patterson Business Park Expansion Project

Fault Rupture

There are no Alquist-Priolo Earthquake Fault Zones within the project site. This condition precludes the possibility of the proposed project being exposed to fault rupture. No impacts would occur.

Strong Ground Shaking

The California Geological Survey maintains a web-based computer model that estimates probabilistic seismic ground motions for any location within California. The computer model estimates the “Design Basis Earthquake” ground motion, which is defined as the peak ground acceleration with a 10-percent chance of exceedance in 50 years (475-year return period). For alluvium soil type, on which the project site is located, the estimated peak ground acceleration is approximately 0.45g.

The project site may be exposed to strong ground shaking during an earthquake in the general region. The project would implement all applicable requirements of the most recent California Building Standards Code, which provides criteria for the seismic design of buildings. Seismic design criteria account for peak ground acceleration, soil profile, and other site conditions, and they establish corresponding design standards intended primarily to protect public safety and secondly to minimize property damage. Mitigation is proposed that would require the project applicant to submit site plans

to City of Patterson for review and approval that demonstrate that proposed project's plans incorporate all applicable seismic design criteria of the most recent California Building Standards Code. Accordingly, potential ground shaking impacts would be reduced to a level of less than significant.

Ground Failure and Liquefaction

Liquefaction occurs when saturated soil loses shear strength and deforms as a result of increased pore water pressure induced by strong ground shaking during an earthquake. As the excess pore pressure dissipates, volume changes are produced within the liquefied soil layer that can manifest at the ground surface as settlement of structures, floating of buried structures, and failure of retaining walls. Soil types most susceptible to liquefaction are saturated, loose, sandy soils. Clay soils are not typically susceptible to liquefaction. As shown in Table 3.6-2 soils within the project site consist of clay, clay loam, gravely clay loam, gravely sandy loam, and fine sandy loam. Because of the predominate presences of clay in onsite soils, onsite liquefaction is not likely to occur. Impacts would be less than significant.

Landslides

The project site contains mostly flat relief, although both the California Aqueduct and I-5 sit upon raised embankments that are approximately 50 feet higher in elevation than the rest of the site. The Delta-Mendota Canal is also located within raised embankments. The embankments are engineered and therefore unlikely to experience landslides. Nonetheless, implementation of Mitigation Measure GEO-1 would require development near these features to take into account the stability of the adjacent embankments during soil engineering and reduce impacts to a less than significant level.

Offsite Utility Alignments

Fault Rupture

The offsite utility alignments are not located within an Alquist-Priolo Earthquake Fault Zone. This condition precludes the possibility of the offsite utility alignments being exposed to fault rupture. No impacts would occur.

Strong Ground Shaking

As previously discussed, the project area, including the offsite utility alignments, may be exposed to strong ground shaking. Implementation of Mitigation Measure GEO-1 would require the project applicant to submit plans for the utility alignments to the City of Patterson for review and approval that demonstrate that the utility alignments incorporate all applicable seismic design criteria of the most recent California Building Standards Code. Accordingly, potential ground shaking impacts would be reduced to a level of less than significant.

Ground Failure and Liquefaction

The offsite utility alignments are underlined by Capay clay and Stomar clay. A previously discussed, clay soils are not typically susceptible to liquefaction. As such, impacts would be less than significant.

Landslides

Alignments 1 and 3 would be located in areas of mostly flat relief. However, Alignment 2 would be located directly adjacent to the Delta Mendota Canal, which is located within raised embankments. The embankments are engineered and, therefore, are unlikely to experience landslides. Nonetheless, implementation of Mitigation Measure GEO-1 would require development near the canal to take into account the stability of the adjacent embankments during soil engineering thereby reducing potential impacts to less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM GEO-1 Prior to the issuance of building permits for each building within the project site, the project applicant shall submit a geotechnical study and building plans to the City of Patterson for review and approval. The design-level geotechnical study shall be prepared by a qualified engineer and shall identify grading and building practices necessary to ensure stable building conditions, including the abatement of expansive soil conditions on the project site. The project applicant shall implement the recommendations of the approved geotechnical study into project plans. The project's building plans shall demonstrate that they incorporate all applicable recommendations of the geotechnical study and comply with all applicable requirements of the latest adopted version of the California Building Standards Code. A licensed professional engineer shall prepare the plans, including those that pertain to soil engineering, structural foundations, pipeline excavation, and installation. The approved plans shall be incorporated into the proposed project. All onsite soil engineering activities shall be conducted under the supervision of a licensed Geotechnical Engineer or Certified Engineering Geologist.

Level of Significance After Mitigation

Less than significant impact.

Erosion

Impact GEO-2:	Construction activities associated with the proposed project have the potential to create erosion and sedimentation.

Impact Analysis

This impact evaluates the proposed project's potential to create erosion and sedimentation.

West Patterson Business Park Expansion Project

Construction activities associated with the proposed project would involve grading, excavation, and trenching activities that could expose barren soils to sources of wind or water, resulting in the potential for erosion and sedimentation on and off the project site. National Pollutant Discharge

Elimination System (NPDES) stormwater permitting programs regulate stormwater quality from construction sites, which includes erosion and sedimentation. Under the NPDES permitting program, the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) are required for construction activities that would disturb an area of 1 acre or more. The SWPPP must identify potential sources of erosion or sedimentation that may be reasonably expected to affect the quality of stormwater discharge as well as identify and implement Best Management Practices (BMPs) that ensure the reduction of these pollutants during stormwater discharges. Typical BMPs intended to control erosion include sand bags, detentions basins, silt fencing, storm drain inlet protection, street sweeping, and monitoring of water bodies.

These requirements have been incorporated into the proposed project under Mitigation Measure HYD-1. The implementation of an SWPPP and its associated BMPs would reduce potential erosion impacts to a level of less than significant.

Offsite Utility Alignments

Similar to construction of the business park expansion, construction activities associated with the offsite utility alignments would involve trenching activities that could expose barren soils to sources of wind or water, resulting in the potential for erosion and sedimentation within and outside of the utility alignments. As such, implementation of Mitigation Measure HYD-1 and the required SWPPP and its associated BMPs would reduce potential erosion impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure HYD-1.

Level of Significance After Mitigation

Less than significant impact.

Unstable Geologic Units and Soils

Impact GEO-3:	The proposed project may expose persons or structures to hazards associated with unstable geologic units or soils.

Impact Analysis

This impact evaluates the proposed project's potential to expose persons or structures to hazards associated with unstable geologic units or soils.

West Patterson Business Park Expansion Project

As part of the proposed project, the project site would be graded, and the areas underlying the building pads would be soil engineered in accordance the recommendations of a design-level geotechnical study and the requirements of the California Building Standards Code. This requirement is established by Mitigation Measure GEO-1. This process would involve removal of any

encountered unsuitable soils, the placement of engineered fill, and compaction in order to ensure that the proposed structures are adequately supported. These practices would ensure that the proposed project is located on stable soils and geologic units and would not be susceptible to settlement or ground failure. Therefore, the implementation of Mitigation Measure GEO-1 would reduce impacts to a level of less than significant.

Offsite Utility Alignments

The offsite utility alignments would be trenched, installed, and backfilled in accordance with the recommendations of a design-level geotechnical study and the requirements of the California Building Standards Code. Implementation of a design-level geotechnical study is required by Mitigation Measure GEO-1. Implementation of recommendations from the design-level geotechnical study would ensure that the utility alignments are located on stable soils and geologic units and would not be susceptible to settlement or ground failure. As such, implementation of Mitigation Measure GEO-1 would reduce impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure GEO-1.

Level of Significance After Mitigation

Less than significant impact.

Expansive Soils

Impact GEO-4:	Development of the proposed project may expose persons or structures to hazards associated with expansive soils.

Impact Analysis

This impact evaluates the proposed project's potential to expose persons or structures to hazards associated with expansive soils.

West Patterson Business Park Expansion Project

The United States Department of Agriculture Natural Resource Conservation Service indicates that the project site contains Capay clay, which exhibits a high shrink-swell potential, a characteristic of expansive soils. Other onsite soils containing clay may also exhibit high shrink-swell potential. Accordingly, the development of the proposed project may expose persons and structures to hazards associated with expansive soils. Implementation of Mitigation Measure GEO-1 would require the project applicant to submit a design-level geotechnical study to the City of Patterson identifying measures to abate expansive soil conditions. This would reduce potential impacts related to expansive soils to less than significant.

Offsite Utility Alignments

The United States Department of Agriculture Natural Resource Conservation Service indicates that offsite utility alignments would be located on Capay clay and Stomar clay. Capay clay exhibits a high shrink-swell potential, a characteristic of expansive soils. Stomar clay may also exhibit high shrink-swell potential. Implementation of Mitigation Measure GEO-1 would require the project applicant to submit a design-level geotechnical study to the City of Patterson identifying measures to abate expansive soil conditions along the offsite utility alignments. This would reduce potential impacts related to expansive soils to less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure GEO-1.

Level of Significance After Mitigation

Less than significant impact.

3.7 - Hazards and Hazardous Materials

3.7.1 - Introduction

This section describes the existing hazards and hazardous materials setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained within the City of Patterson General Plan, the General Plan EIR, the California State Water Resources Board's Geotracker database and information provided by the property owners.

3.7.2 - Environmental Setting

Hazardous Materials

Hazardous materials, as defined by the California Code of Regulations, are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed, or otherwise managed. Hazardous materials are grouped into the following four categories, based on their properties:

- Toxic – causes human health effects
- Ignitable – has the ability to burn
- Corrosive – causes severe burns or damage to materials
- Reactive – causes explosions or generates toxic gases

A hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. The criteria that define a material as hazardous also define a waste as hazardous. If improperly handled, hazardous materials and hazardous waste can result in public health hazards if released into the soil or groundwater or through airborne releases in vapors, fumes, or dust. Soil and groundwater having concentrations of hazardous constituents higher than specific regulatory levels must be handled and disposed of as hazardous waste when excavated or pumped from an aquifer. The California Code of Regulations, Title 22, Sections 66261.20-24 contains technical descriptions of toxic characteristics that could cause soil or groundwater to be classified as hazardous waste.

Hazardous Materials Databases

The California State Water Resources Board's Geotracker database—which lists sites that generate, store, treat, or dispose of hazardous wastes or sites for which a release or incident has occurred—was queried for information about the project site and vicinity.

The project site was not listed on the Geotracker database. Three sites within a 1.0-mile search radius of the project were listed on the Geotracker database and are summarized in Table 3.7-1. As shown in the table, two of the three sites involved clean-up of hazardous materials, which have been completed. The third site consists of a permitted underground storage tank facility that has no reported violations. Based on the status of all three sites, none would pose a potential risk to the project site.

Table 3.7-1: Hazardous Materials Site Summary – 1.0-Mile Radius

Name	Address	Distance and Relationship to Project Site	Characteristics	Status
TEG Investments (76 Gas Station)	15051 Rogers Road	0.25 mile south	Listed as a permitted underground storage tank site	No violations reported (2012)
Patterson Flying Services Corporation (Patterson Airport)	2549 Sperry Avenue	0.50 mile east	Listed as a “land disposal site” and “Cleanup Program Site”	Clean-up completed; case closed (2011)
Cal Fire	2142 Sperry Avenue	1.00 mile southeast	Cal Fire Station; Listed as leaking underground storage tank clean-up site	Clean-up completed; case closed (1996)
Source: State Water Resources Control Board, 2012.				

Common Hazardous Materials

Below are descriptions of common hazardous materials that may be found in urban environments. The likelihood of encountering these materials is evaluated, based on information provided by the property owners and site reconnaissance observations by Michael Brandman Associates.

Asbestos

Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals mined for their useful properties, such as thermal insulation, chemical and thermal stability, and high tensile strength. Asbestos is commonly used as an acoustic insulator, thermal insulation, fireproofing, and in other building materials. Asbestos is made up of microscopic bundles of fibers that may become airborne when asbestos-containing materials are damaged or disturbed. When these fibers get into the air, they may be inhaled into the lungs, where they can cause significant health problems. The California Occupational Health and Safety Administration (CalOSHA) defines asbestos-containing construction materials as any material that contains more than 0.1 percent asbestos by weight.

An approximately 3,400 square-foot single-family residence and an approximately 700 square-foot storage structure are located in the center of the project site. The property owner indicates that the structures date to the mid-1970s or earlier. Because of the age of the structures onsite, there is a potential for asbestos-containing material (ACM) to be present.

With regard to naturally occurring asbestos, the Department of Conservation, Division of Mines and Geology published a guide entitled A General Location Guide for Ultramafic Rocks in California - Areas More Likely to Contain Naturally Occurring Asbestos, dated August 2000, for generally identifying areas that are likely to contain naturally occurring asbestos. According to the California Division of Mines and Geology, rock formations that contain naturally occurring asbestos are known to be present in 44 of California’s 58 counties, including Stanislaus County.

A review of a map containing areas more likely to have rock formations containing naturally occurring asbestos in California indicates that the project site is not in an area that is likely to contain

naturally occurring asbestos. As noted in the Division of Mines and Geology's report, the map only shows the general location of formations containing naturally occurring asbestos and may not show all potential occurrences. The nearest locations of naturally occurring asbestos shown are approximately 20 miles west of the project site in the Diablo Range near the Santa Clara County/Stanislaus County line. Therefore, asbestos is not a significant environmental concern.

Lead

Lead is a highly toxic metal that was used until the late 1970s in a number of products, most notably in paint. Lead may cause a range of health effects, from behavioral problems and learning disabilities to seizures and death. Primary sources of lead exposure are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated soil. Both the U.S. Environmental Protection Agency (EPA) and the California Department of Health Services define lead paint as containing a minimum of 0.5 percent by weight. Lead-containing waste materials with a concentration greater than 0.1 percent are considered hazardous waste by California law.

Because of the age of the structures onsite, there is the potential for lead-based paints (LBP) to be present.

Polychlorinated Biphenyls (PCBs)

Polychlorinated biphenyls (PCBs) are mixtures of synthetic chemicals with similar chemical structures. PCBs can range from oily liquids to waxy solids. Because of their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications, including electrical (such as transformers), heat transfer, and hydraulic equipment; as plasticizers in paints, plastics, and rubber products; in pigments, dyes, and carbonless copy paper; and many other applications. More than 1.5 billion pounds of PCBs were manufactured in the United States prior to cessation of production in 1977.

Electricity is provided to the site by Turlock Irrigation District (TID). Onsite transformers were not labeled to indicate their PCB content. No staining or evidence of releases was observed associated with the transformers. As the owner of the transformers, TID would be responsible for any inspections, testing, reporting, and release response.

Before EPA banned the manufacture of PCBs in 1978, PCBs were commonly incorporated in the manufacture of fluorescent light ballasts. Based on the age of the buildings on the project site, there may be fluorescent light ballasts present that may have PCB-containing capacitors.

Mercury

Mercury is a naturally occurring element that is found in air, water, and soil that has traditionally been used to make products such as fluorescent lamps, switches, and thermometers. Mercury exposure at high levels can harm the brain, heart, kidneys, lungs, and immune system of people of all ages. Scientific studies have shown that high levels of mercury in the bloodstream of unborn babies and young children may harm the developing nervous system, making a child less able to think and learn.

Based on the age of the buildings on the project site, there may be mercury-containing fluorescent lights and switches. Therefore, building materials containing mercury may be an environmental concern at the project site.

Chlorofluorocarbons (CFCs)

CFCs were developed in the early 1930s and are used in a variety of industrial, commercial, and household applications. These substances are non-toxic, non-flammable, and non-reactive with other chemical compounds. These desirable safety characteristics, along with their stable thermodynamic properties, make them ideal for many applications—as coolants for commercial and home refrigeration units, aerosol propellants, electronic cleaning solvents, and blowing agents. CFCs contribute to depletion of the ozone layer and, consequently, to skin cancer and cataracts. CFCs also are greenhouse gases and contribute to global climate change.

CFC-containing equipment may be present at the single-family residence located on the project site.

Radon

Radon is a carcinogenic, radioactive gas resulting from the natural breakdown of uranium in soil, rock, and water. Radon gas enters a building through cracks in foundations and walls. Once inside the building, radon decay products may become attached to dust particles and inhaled, or the decayed radioactive particles alone may be inhaled and cause damage to lung tissue. The EPA has established a safe radon exposure threshold of 4.0 picocuries per liter of air (pCi/L).

Table 3.7-2 summarizes the results of indoor radon samples taken in the four Stanislaus zip codes nearest Patterson¹. As shown in the table, when samples from the four zip codes are aggregated, zero of 15 samples (0 percent) exceed 4.0 pCi/L. The California Department of Health Services classifies zip codes with 0 to 6 percent of samples exceeding 4.0 pCi/L to be areas of low radon potential.

Table 3.7-2: Indoor Radon Sample Summary

Zip Code	Indoor Radon Samples		
	Total No. Taken	No. Exceeding 4.0 pCi/L	Percent Exceeding 4.0 pCi/L
95360 (Newman)	3	0	0%
95363 (Patterson)	1	0	0%
95380 (Turlock)	9	0	0%
95382 (Turlock)	2	0	0%
Total	15	0	0%
Note: Project site is located in 95363 zip code. Source: California Department of Health Services, 2010.			

¹ Note that no indoor radon samples were taken in the 95313 (Crows Landing) or 95387 (Westley) zip codes.

High-Voltage Power Lines

High-voltage power lines emit electromagnetic fields (EMFs), which have been alleged to be a cause of cancer. However, scientific research has never conclusively established a link between EMFs and cancer.

A high-voltage power line parallels the west side of the California Aqueduct. Another high-voltage power line connects this line with the TID substation located along Rogers Road.

Agricultural Chemicals

The property owners provided information regarding agricultural chemicals used within the project site during 2010 and 2011. Table 3.7-3 provides a list of chemicals used. These chemicals were used on peach, tomato and wheat crops grown on the project site.

Table 3.7-3: Summary of Recently Used Agricultural Chemicals

Project Component	Pesticide	Manufacturer
Arambel Business Park	Honcho Herbicide	Monsanto
	Goal 2XL	Dow Agroscience
	Deploy	Custom Ag
	Nutra-Plus 0-8-0	Custom ChemicID
	Scala SC	Bayer Crop Science
	Nu-Cop 50 DF	Albaugh
	Exit	Miller Chemical
	ZP Rodent Bait	Bell Labs
	Weevil-Cide Tablets	UPI
	Rovral 4 Flowable Fungicide	Bayer Crop Science
	Lambda-CY EC	UPI
	Pheast	Miller Chemical
	Pristine Fungicide	BASF
	Bumper 41.8 EC	Makhteshim-Agan
	Kumulus DF Fungicide-Acaricide	Arysta
	Altacor	Dupont
KDN Retail Center/Business Park	Shark EW	FMC
	MCPA-4 Amie	Nufarm
	Coragen (HI & Ny) Insect Control	Dupont
	Asana XL Insecticide	Dupont
	Dimethoate 4e	Arysta

Table 3.7-3 (cont.): Summary of Recently Used Agricultural Chemicals

Project Component	Pesticide	Manufacturer
KDN Retail Center/Business Park (cont.)	Spray-Aide	Miller
	Exit	Miller
	Rally 40 WSP	Dow
	Dusting Sulfur	Wilbur-Ellis
	Quadris Top	Syngenta
	Chloronil 720	Syngenta
	Forum Fungicide	BASF
	Syl-Tac	Wilbur-Ellis
Source: Jeff Arambel, 2011; Nancy Pedersen, 2011.		

Aboveground and Underground Storage Tanks

Petroleum hydrocarbons are derived from crude oil, which is refined into various petroleum products such as diesel, gasoline, kerosene, lubricants, and heavy fuel oils. Hydrocarbons constituents include benzene, N-heptane, and toluene, and generate health effects such as cancer, leukemia, asthmatic bronchitis, kidney damage, and eye irritation. Hydrocarbons are stored in aboveground storage tanks (ASTs) and underground storage tanks (USTs). Leaking ASTs and USTs can result in contamination of groundwater sources or fire and explosion.

The property owners have indicated that ASTs or USTs are not currently present at the project site nor have any been used previously. This precludes the possibility of contamination associated with leaking ASTs or USTs.

Airports

Patterson Airport

The Patterson Airport is located approximately 0.5 mile east of the project site. The airport is privately owned and supports small agricultural aircraft and, on occasion, small recreational aircraft.

Most of the project site is located within Conditions Area 4 (Other Land Within the Airport Planning Boundary) of the Patterson Airport Land Use Planning Area, as set forth in the Stanislaus County Airport Land Use Commission Plan. Conditions Area 4 is the least stringent airport land use compatibility zone, with nearly all land use and development activities classified as “Compatible.”

3.7.3 - Regulatory Framework

Federal

U.S. Environmental Protection Agency

The EPA leads the nation’s environmental science, research, education and assessment efforts. The EPA’s mission is to protect human health and to safeguard the natural environment, related to air,

water, and land. The EPA works closely with other federal agencies, state and local governments, and Indian tribes to develop and enforce regulations under existing environmental laws. The EPA is primarily responsible for researching and setting national standards for a variety of environmental programs and delegates to states and tribes responsibility for issuing permits, and monitoring and enforcing compliance. When national standards are not met, the EPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality. The EPA also works with industries and all levels of government in a wide variety of voluntary pollution prevention programs and energy conservation efforts.

EPA Region 9 has jurisdiction over Manteca and the southwestern United States (Arizona, California, Nevada, and Hawaii).

EPA programs related to hazardous materials include:

- Community Right-to-Know Information
- Pesticide Management
- Toxic Release Inventory
- Brownfields (CalSites Database)
- Cleanup Technologies
- Compliance Assistance
- Emergency Response
- Hazardous Waste
- Oil Spills

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from the point of generation to their ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program establishes tank and leak detection standards, including spill and overflow protection devices for new tanks. The tanks must also meet performance standards to ensure that the stored material will not corrode the tanks. Owners and operators of USTs had until December 1998 to meet the new tank standards. As of 2001, an estimated 85 percent of USTs complied with the required standards.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The act was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances releases. The act deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it

establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

Federal Insecticide, Fungicide and Rodenticide Act

The federal Insecticide, Fungicide, and Rodenticide Act establishes procedures for regulating the use and sale of pesticides to protect human health and the environment, and it provides federal control of pesticide distribution, sale, and use. The legislation governs the registration and labeling of pesticides and enforcement against banned and unregistered products.

State***California State Aeronautics Act***

The State Aeronautics Act, Public Utilities Code (PUC) Section 21001, et seq., is the foundation for the California Department of Transportation's Division of Aeronautics aviation policies. The Division issues permits for and annually inspects hospital heliports and public-use airports, makes recommendations regarding proposed school sites within 2 miles of an airport runway, and authorizes helicopter landing sites at/near schools. Aviation system planning provides for the integration of aviation into transportation system planning on a regional, statewide, and national basis. The Division of Aeronautics administers noise regulation and land use planning laws that foster compatible land use around airports and encourages environmental mitigation measures to lessen noise, air pollution, and other impacts caused by aviation. The Division of Aeronautics also provides grants and loans for safety, maintenance, and capital improvement projects at airports.

California Health and Safety Code

The California Environmental Protection Agency has established rules governing the use of hazardous materials and the management of hazardous wastes. California Health and Safety Code Sections 25531, et seq. incorporate the requirements of Superfund Amendments and Reauthorization Act and the Clean Air Act as they pertain to hazardous materials. Health and Safety Code Section 25534 directs facility owners storing or handling acutely hazardous materials in reportable quantities to develop a Risk Management Plan (RMP). The RMP must be submitted to the appropriate local authorities, the designated local administering agency, and the EPA for review and approval.

Cal/OSHA

The Cal/OSHA is responsible for implementing workplace regulations. Cal/OSHA considers an asbestos-containing material as any material containing at least 1 percent asbestos. A contractor certified by the California Contractor's State License Board to conduct asbestos-related work must perform the removal or disturbance of 100 square feet or more of asbestos-containing material.

Regional

San Joaquin Air Quality Management District

The SJAQMD adopted regulations and policies implementing, among other things, asbestos demolition and renovation requirements developed by the EPA, known as the NESHAP. NESHAP requires that a thorough inspection for asbestos-containing material be conducted before any regulated facility is demolished or regulated. Any building at the site of a proposed public or commercial project, such as a new shopping center, is a facility subject to these regulations.

Local

City of Patterson

General Plan

The City of Patterson General Plan sets forth the following goals and policies relevant to hazards and hazardous materials:

- **Policy HS-3.6:** Fire prevention. The City shall require property owners to remove fire hazards, including vegetation, hazardous structures and materials, and debris, as directed by the Fire Department.
- **Policy HS-3.8:** Testing of hazardous areas. In cooperation with the Stanislaus County Health Department, the City shall require testing for contamination in areas suspected as potentially hazardous and shall require that remediation of hazardous areas takes place prior to development.
- **Policy HS-4.1:** Emergency response plan. The City shall maintain, periodically update, and test the effectiveness of its Emergency Response Plan. As part of the periodic update, the City shall review county and state emergency response plans and procedures to ensure coordination with the City's plan.
- **Policy HS-4.2:** Emergency access routes. The City shall identify emergency access routes and shall ensure that they are kept free of traffic impediments. Emergency access and evacuation routes shall be maintained for areas east and west of the railroad right-of-way.
- **Policy HS-4.4:** Siting of emergency facilities. Critical emergency response facilities such as hospitals, fire, police, emergency service facilities, and utilities shall be sited to minimize their exposure to flooding, seismic effects, fire, or explosion, and to ensure the protection of areas on either side of the railroad right-of-way.
- **Policy HS-6.3:** Police staffing. The City shall provide and maintain an adequate level of police equipment and personnel consistent with city growth and development.
- **Goal HS-7:** To protect the health and safety of Patterson residents from the harmful effects of the use, transport and disposal of hazardous substances.
- **Policy HS-7.1:** Coordination. The City shall coordinate with the California Highway Patrol, the Stanislaus County Department of Environmental Health Services, the County Sheriff's Department, and all other appropriate local, state and federal agencies in hazardous materials

route planning, notifications and incident response, to ensure appropriate first response to hazardous material incidents.

- **Policy HS-7.2:** Avoidance. The City shall seek to avoid and minimize exposure of sensitive land uses to potentially hazardous emissions along truck routes and rail lines which may be used by surface vehicles and rail cars carrying hazardous or toxic substances. These truck routes include Interstate 5, State Highway 33, and Las Palmas Avenue. Rail corridors include the two primary lines running north-south through Patterson.
- **Policy HS-7.3:** Management of hazardous materials. The City shall regulate the storage of hazardous and waste materials consistent with state and federal law. The City shall not permit above ground tanks without considering the potential hazards that would result from the release of stored liquids caused by possible rupture or collapse, and may request applicants to have an emergency response plan.
- **Policy HS-7.4:** Industrial facilities. The City shall work with responsible agencies to ensure that all industrial facilities are constructed and operated in accordance with the most current safety and environmental protection standards.
- **Policy HS-7.5:** Storage. Industries that store and process significant quantities of hazardous or toxic materials shall provide a buffer zone between the installation that houses such substances and the property boundaries of the facility sufficient to protect the public in the event of the release or leak of the materials.
- **Policy HS-7.6:** Remediation. The City shall work with other responsible agencies on efforts to clean up or contain identified soil or water contamination in the city limits.
- **Policy HS-7.7:** Written confirmation of remediation. The City shall require written confirmation from applicable local, regional, state, and federal agencies that known contaminated sites have been deemed remediated to a level appropriate for land uses proposed prior to the City approving site development or provide an approved remediation plan that demonstrates how contamination will be remediated prior to site occupancy. This documentation shall specify the extent of development allowed on the remediated site as well as any special conditions and/or restrictions on future land uses.

County of Stanislaus

Stanislaus County Airport Land Use Compatibility Plan

The Stanislaus County Airport Land Use Compatibility Plan identifies land use compatibility policies applicable to future development in the vicinity of all Stanislaus County airports, including the Patterson Airport. The policies are designed to ensure that future land uses in the surrounding area will be compatible with potential aircraft activity at the airport. Each airport is assigned compatibility zones that dictate allowed land uses according to airport proximity. The proposed project site is within Patterson Airport Planning Area 4 (Other Lands Within Airport Planning Area). Commercial uses, including shopping centers and retail stores, are listed as compatible within Area 4.

3.7.4 - Methodology

Michael Brandman Associates evaluated potential impacts on hazards and hazardous materials through review of the General Plan, the General Plan EIR, the California State Water Resources Board's Geotracker database, and information provided by the property owners.

3.7.5 - Thresholds of Significance

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

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (Refer to Section 7, Effects Found Not To Be Significant.)
- d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working the project area?
- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? (Refer to Section 7, Effects Found Not To Be Significant.)
- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? (Refer to Section 7, Effects Found Not To Be Significant.)

3.7.6 - Project Impacts and Mitigation Measures

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

Past and Present Site Usage

Impact HAZ-1:	Development of the proposed project may have the potential to expose human health and the environment to hazardous materials associated with past or present usage of the project site or surrounding land uses.

Impact Analysis

This impact addresses the potential for the development of the proposed project to expose persons or the environment to hazardous materials associated with past and current uses of the project site, as well as activities at surrounding land uses.

West Patterson Business Park Expansion Project

The Master Plan area is not listed on any hazardous materials sites compiled pursuant to Government Code Section 65962.5.

Asbestos-Containing Materials

The project would involve the demolition of the single-family residence and storage structure located at the center of the site. Because of the age of the structures, there is a potential for asbestos-containing materials to be present. Therefore, the project is required to comply with San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4002 (National Emissions Standards for Hazardous Air Pollutants) and Rule 3050 (Asbestos Removal Fees). The applicant is required to determine if the structures are considered “regulated facilities” under National Emissions Standards for Hazardous Air Pollutants (NESHAP) by contacting the SJVAPCD. If there are regulated facilities to be demolished, the facilities must be inspected to determine if any ACM is present. If ACM is present, the project must follow the SJVAPCD requirements and, potentially, Cal OSHA and Cal-EPA regulations. Mitigation is proposed requiring that ACM be properly removed and disposed of by a certified contractor prior to demolition activities. The implementation of this mitigation measure would reduce impacts to a level of less than significant.

Lead-Based Paint

Based on the age of the structures onsite, there is the potential for LBP to be present. Prior to demolition, a Lead-Based Paint Survey will need to be completed in accordance with the EPA and Occupational Safety and Health Administration (OSHA) guidelines.

Occupational exposure to lead is regulated by both the federal OSHA (29 CFR 1926.62) and the California OSHA (Title 8, General Industry Safety Order (GISO) 5198 and Construction Safety Order (CSO) 1532.1). Based on federal and California OSHA standards, when disturbing paints that contain lead (in any detectable amount), OSHA and CalOSHA regulations should be followed.

Mitigation is proposed requiring that these materials be properly removed and disposed of by a certified contractor prior to demolition activities. The implementation of this mitigation measure would reduce impacts to a level of less than significant.

Other Hazardous Waste-Containing Building Materials

Based on the age of the structures on site there is the potential to encounter fluorescent lights with PCB-containing ballasts, light switches containing mercury, and CFC-containing equipment. Mitigation is proposed requiring that these materials be properly removed and disposed of by a certified contractor prior to demolition activities. The implementation of this mitigation measure would reduce impacts to a level of less than significant.

Agricultural Chemicals

The project site has been used as cultivated farmland for at least 50 years. As such, agricultural chemicals such as pesticides, herbicides and fertilizer would have historically been used on the site. As shown on Table 3.7-3, the property owners provided information on recently used agricultural chemicals. Because of the limited availability of information, it could not be determined what the active ingredient was for each pesticide; therefore, it was not possible to determine the potential persistence of each compound in the soil.

Therefore, Mitigation Measure HAZ-1b is proposed requiring the project applicant to undertake Phase II soil testing of the project site to determine if residual concentrations of agricultural chemicals are present and, if so, whether these concentrations are within acceptable limits for commercial development. If the concentrations exceed acceptable limits, the mitigation measure requires the applicant to perform soil remediation activities prior to grading to ensure that human health and the environment are not exposed to harmful concentrations of agricultural chemicals. With the implementation of this mitigation measure, impacts would be reduced to a level of less than significant.

Offsite Utility Alignments

Alignments A and B would be located adjacent to the Patterson Flying Services Corporation site, which is included in the Geotracker database. The Patterson Flying Services Corporation site contained hazardous materials, the clean-up of which has been completed. Alignment C would be located adjacent to the TEG Investments site, which is included in the Geotracker database. The TEG Investments site contains a 76 Gas Station and has a permitted underground storage tank for which no leaks have been reported. Because of the status of these listed sites, construction of the offsite utility alignments in their proximity would not expose persons or the environment to hazardous materials. Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HAZ-1a Prior to issuance of demolition permits for any structures located on the project site (including the residence and storage structure), the project applicant shall retain a certified hazardous waste contractor to properly remove and dispose of all materials containing asbestos, lead paint, PCBs, mercury and CFCs in accordance with federal

and state law. The applicant shall submit documentation to the City of Patterson demonstrating that this contractor has been retained as part of the demolition permit application. Upon completion of removal and disposal, the project applicant shall provide documentation to the City of Patterson demonstrating that these activities were successfully completed.

- MM HAZ-1b** Prior to issuance of grading permits for any portion of the project site where pesticides or other agricultural chemicals have been applied within the preceding 12 months, the project applicant shall retain a qualified consultant to perform Phase II testing of the project site soils for the presence of residual concentrations of agricultural chemicals. Soils shall be laboratory tested for agricultural chemical residuals in accordance with California Department of Toxic Substances Control (DTSC) guidelines. If the testing yields concentrations in excess of acceptable limits for commercial or light industrial development, the project applicant shall retain a qualified contractor to perform soil remediation in accordance with DTSC guidelines. The soil remediation activities shall be completed prior to grading activities. The applicant shall submit documentation to the City of Patterson demonstrating that soil testing was performed and any necessary remediation was completed as part of the grading permit application. This mitigation measure does not apply in locations where pesticides or other agricultural chemicals have not been applied within the preceding 12 months.

Level of Significance After Mitigation

Less than significant impact.

Risk of Upset

Impact HAZ-2:	The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions.

Impact Analysis

This impact will evaluate the proposed project's potential to create hazards caused by the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

West Patterson Business Park Expansion Project

Short-Term Impacts

Project construction activities may involve the use and transport of hazardous materials. These materials may include fuels, oils, mechanical fluids, and other chemicals used during construction. Transportation, storage, use, and disposal of hazardous materials during construction activities would be required to comply with applicable federal, state, and local statutes and regulations. Compliance would ensure that human health and the environment are not exposed to hazardous materials. In

addition, Mitigation Measure HYD-1 requires the project applicant to implement a Stormwater Pollution Prevention Plan during construction activities to prevent contaminated runoff from leaving the project site. Therefore, no significant impacts would occur during construction activities.

Because of the age of the onsite structures, there is the potential for exposure to hazardous waste-containing building materials and equipment, which if disrupted can become a hazard. As discussed in Impact HAZ-1a, mitigation is proposed to require the proper removal and disposal of these hazardous materials in accordance with federal and state law. The implementation of this mitigation would reduce impacts to a level of less than significant.

Long-Term Impacts

The proposed project would be guided by Master Development Plan that sets parameters on land use activities. Such parameters include lists of “permitted” and “conditional” uses.

For the business park and light industrial uses, the Master Development Plan identifies the following as permitted uses: call centers, electronic repair and assembly, research and development, manufacturing, packaging, software development, warehouse, and wholesale distribution.

For the general commercial uses, the Master Development Plan identifies the following as permitted uses: apparel shops, appliance stores, banks and other financial institutions, department stores, drug stores, fast food restaurants, hotels and motels, markets (food), retail stores, sporting goods stores, and similar uses. The Master Development Plan identifies conditional uses as consisting of automobile sales, automobile service stations, bars and cocktail lounges, equipment rental, liquor stores, professional and administrative offices, and other similar uses.

All of the previously listed uses have limited potential to handle large quantities of hazardous materials. Furthermore, it should be noted that the Master Development Plan specifically prohibits airports/heliports, concrete plants, exterminators, foundries, forging, metal casting, freight terminal, hazardous and nuclear material storage and disposal, manufacturing and storage of fireworks or explosives, quarries or mining, and rendering plants, which are all uses that would be expected to handle large quantities of hazardous materials.

In summary, the proposed project would not potentially create a significant hazard to the public or the environment from routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions. Impacts would be less than significant.

Potential Impacts from Interstate 5

Portions of the project site are within 300 feet of the I-5 right-of-way. I-5 is used by trucks hauling hazardous materials such as petroleum products, industrial chemicals, and similar substances.

Hazardous materials transport is governed by federal and state regulations intended to minimize risk to public health, safety, and welfare from accidental release of such substances. Furthermore, the proposed project would be set back several hundred feet from the nearest I-5 travel lane, making it

unlikely that it would be susceptible to hazardous materials releases that occur within the freeway. Impacts would be less than significant.

Offsite Utility Alignments

Short-Term Impacts

Similar to construction of the business park expansion, construction of the offsite utility alignments may involve the use and transport of hazardous materials. Compliance with applicable federal, state, and local statutes and regulations as well as Mitigation Measure HYD-1 would ensure the proposed project would not potentially create a significant hazard to the public or the environment from routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions. Impacts would be less than significant.

Long-Term Impacts

The offsite utility alignments would not generate or transmit significant quantities of hazardous materials. As such, utility alignments would not create a long-term significant hazard to the public or the environment from routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions. Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures HAZ-1a and HYD-1.

Level of Significance After Mitigation

Less than significant impact.

Aviation Safety

Impact HAZ-3:	The proposed project would not create aviation safety hazards for people residing or working the project area.

Impact Analysis

The project site is within Patterson Airport Planning Area 4 (Other Lands Within Airport Planning Area) of the Stanislaus County Airport Land Use Commission Plan. Commercial and industrial land uses are identified as “compatible” uses within Planning Area 4.

West Patterson Business Park Expansion Project

As discussed in Impact LU-3, the proposed project’s characteristics would be consistent with the “General Statement” for Planning Area 4. This includes statements associated with airport compatibility, reflective materials, noise, electrical interference, storage of hazardous materials, and lighting. Furthermore, the Airport Land Use Commission Plan does not establish any height limits or density restrictions for land uses within Conditions Area 4. For these reasons, and given the distance

of the project site from the airport, the proposed project would not create any hazards to aviation in the project vicinity. Impacts would be less than significant.

Offsite Utility Alignments

Upon completion, the offsite utility alignments would be located underground and, therefore, would not create aviation safety hazards for people residing or working the project area. No impacts would occur.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Emergency Response and Evacuation

Impact HAZ-4: **The proposed project may interfere with emergency response or evacuation.**

Impact Analysis

This impact will evaluate the proposed project's potential to impair or physically interfere with an emergency response plan or emergency evacuation plan.

West Patterson Business Park Expansion Project

The proposed project consists of the development of approximately 13.47 million square feet of light industrial, business park, and general commercial uses and associated infrastructure on approximately 880 net acres of the project site. Development of the project would include the construction of new roadways and the improvement of existing roadways to provide appropriate circulation. The project site is located adjacent to an urbanized area where existing emergency response times for fire protection, emergency medical services, and police protection meet adopted standards.

Both the Patterson Fire Department and Patterson Police Services expressed concern regarding emergency access to the western portion of the project site between I-5 and the California Aqueduct. The project applicant is proposing to develop an Emergency Vehicle Access that would link this area to Del Puerto Canyon Road via an existing unpaved road that crosses under I-5; refer to Exhibit 2-8 in Section 2, Project Description. The applicant would improve the road to provide an all-weather surface and control access to the road with a gate to prevent unauthorized use. The provision of the Emergency Vehicle Access would ensure that the area between I-5 and the California Aqueduct (Phase IV) are served with a minimum two points of access in accordance with the California Fire Code's requirements.

In recognition that the Patterson Fire Department must deem the Emergency Vehicle Access to be acceptable, Mitigation Measure HAZ-4 requires the City of Patterson to review and approve the proposed emergency vehicle access points in accordance with California Fire Code requirements prior to the recordation of the final map for Phase IV. With the implementation of this mitigation measure, impacts would be less than significant.

Offsite Utility Alignments

Upon completion, the offsite utility alignments would be located underground and therefore would not interfere with emergency response or evacuation. No impacts would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HAZ-4 Prior to approval of the final map for Phase IV, the project applicant shall prepare and submit plans to the City of Patterson for review and approval demonstrating that the portion of the project site located between the California Aqueduct and Interstate 5 can be served with two points of emergency access in accordance with California Fire Code requirements. The approved plans shall be incorporated into the proposed project.

Level of Significance After Mitigation

Less than significant impact.

3.8 - Hydrology and Water Quality

3.8.1 - Introduction

This section describes the existing hydrology and water quality setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information provided by the Western Regional Climate Center, the City of Patterson General Plan, the Federal Emergency Management Agency, and project plans.

3.8.2 - Environmental Setting

Patterson is characterized by a Mediterranean climate, with warm summers, mild winters, and low precipitation. Temperatures in the Patterson area range from an average high of 97.2 degrees Fahrenheit (°F) in July to an average low of 35.6°F in December. Rainfall averages 10.70 inches annually. General meteorological data for the Patterson area, as measured at the Newman weather station, are presented in Table 3.8-1.

Table 3.8-1: Patterson Meteorological Summary

Month	Temperature (°F)		Precipitation (inches)
	Average High	Average Low	
January	55.6	36.1	2.36
February	62.5	39.5	1.99
March	68.8	42.1	1.64
April	75.8	45.1	0.77
May	84.2	49.8	0.34
June	91.9	55.2	0.06
July	97.2	59.3	0.01
August	95.0	58.0	0.02
September	90.2	54.7	0.20
October	80.6	48.7	0.45
November	67.1	40.2	1.10
December	56.3	35.6	1.77
Annual Average	77.1	47.0	10.70
Note: Measurements recorded at the Newman weather station between 1902 and 2007. Source: Western Regional Climate Center, 2011.			

Surface Water Bodies

Surface water includes streams, drainage channels, ponds, lakes, and other water on the surface of the land. Rainfall is the source of most surface water in Patterson. Rainfall occurs during a short season

in relatively intense storms. The amount of water flowing on the surface depends on how much water soaks into the ground, which in turn is dependent on the characteristics of the soil and on the amount of land made impermeable by development (roads, roofs, parking lots, etc.). These impervious surface areas, generally associated with urbanization, prevent water from infiltrating into the soil, resulting in stormwater runoff, which can become polluted as it flows over urbanized areas. This untreated runoff typically enters a storm drain system and is conveyed to local waterways.

Given the commercial and agricultural setting, the Patterson area features a network of natural and man-made surface water bodies. The following is a description of the principal surface water bodies in the Patterson area. Exhibit 3.8-1 depicts the watersheds and surface water bodies in the project vicinity.

San Joaquin River

Patterson is located within the San Joaquin River watershed. The San Joaquin River is the second-longest river in California, extending 300 miles from the Sierra Nevada Mountains to the San Joaquin Delta. The river and its tributaries drain a watershed encompassing approximately 32,000 square miles. In the Patterson area, the river is located approximately 2 miles east of the City.

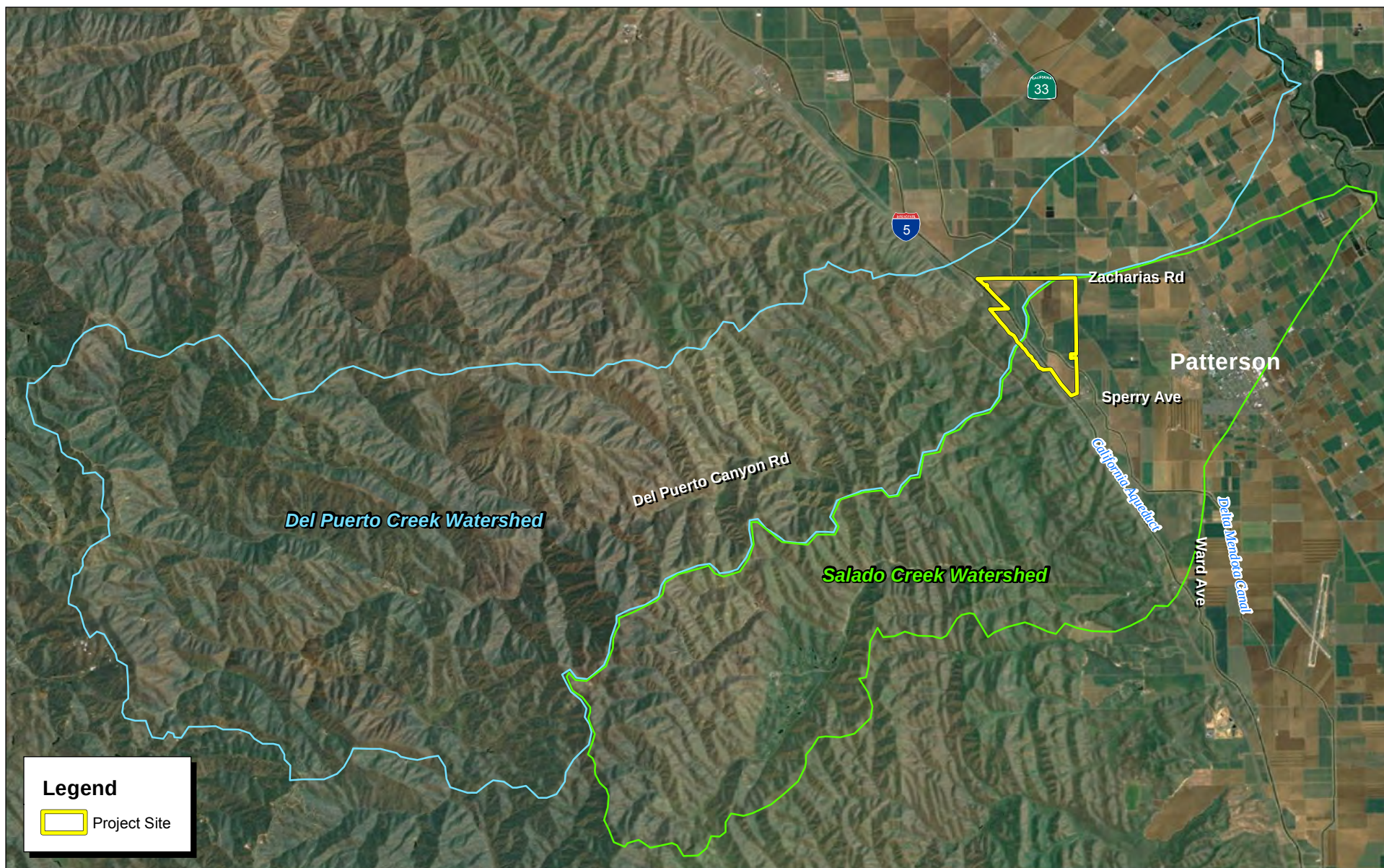
Salado Creek

Salado Creek is the principal natural waterway located within the urbanized portions of the City of Patterson. The waterway is an intermittent stream originating in the Diablo Range south of Patterson. The creek enters Patterson from the south and ultimately discharges into the San Joaquin River east of the city limits. In the late 1990s, flood control improvements were made to Salado Creek, including enlarging the channel within the city limits and installing a 96-inch-diameter pipeline within Olive Avenue between the railroad tracks and the San Joaquin River. Salado Creek is located approximately 1.25 miles east of the project site. Most of the project site is located within the Salado Creek watershed.

Del Puerto Creek

Del Puerto Creek is the principal natural waterway within the project vicinity. The waterway is an intermittent stream originating in Del Puerto Canyon in the Diablo Range west of Patterson. The creek enters the Patterson area from the west and meanders to the northeast before ultimately discharging into the San Joaquin River, approximately 4.75 miles north of the city limits. A small portion of the project site is located within the Del Puerto Creek watershed.

An approximately 3,100 lineal-foot reach of Del Puerto Creek is located within the project boundaries. This reach enters the project site through a double concrete box culvert beneath both Interstate 5 (I-5) and the California Aqueduct. From the culvert eastward, the waterway is largely contained within a natural channel. The Delta-Mendota Canal crosses under the creek via a siphon.



The City of Patterson General Plan indicates the Del Puerto Creek and its associated floodplain are subject to flooding during major storm events. Refer to “Flood Hazard Mapping” for further discussion.

Delta Mendota Canal

The Delta-Mendota Canal is a 117-mile-long channel that is part of the Central Valley Water Project, a joint federal and state water project that spans the length of the Central Valley and provides water for agricultural, urban, and wildlife use. The canal conveys water from Tracy Pumping Plant near Tracy to the Mendota Pool in Fresno County. In the Patterson area, the canal meanders through the west side of the City.

An approximately 10,200-lineal-foot reach of the Delta-Mendota Canal is located within the project boundaries. This reach enters the project site via a siphon under Del Puerto Creek near Zacharias Road and extends in a northwest-southeast direction before leaving the site at Rogers Road.

California Aqueduct

The California Aqueduct is a 444-mile-long conveyance channel that is part of the State Water Project: a state-built and -operated water storage and delivery system that provides water to 29 urban and agricultural water suppliers throughout California.

The aqueduct conveys water from the Banks Pumping Plant near Tracy to a point south of the Tehachapi Mountains, where it splits into two branches. In the Patterson area, the aqueduct parallels the east side of I-5.

An approximately 12,300-lineal-foot reach of the California Aqueduct is located within or adjacent to the project boundaries. This reach enters the project site in the northwest corner near Zacharias Road and extends in a northwest-southeast direction before leaving the site near Sperry Avenue.

Surface Water Quality

The San Joaquin River is the only of the previously mentioned water bodies listed on the U.S. Environmental Protection Agency (EPA) 303(d) list of impaired water bodies, which are defined as those that do not meet, or are not expected to meet, water quality standards. For water bodies identified as impaired, the State is required to develop a Total Maximum Daily Load (TMDL) to account for all sources of pollutants from both point and nonpoint sources that are attributed to its listing. The TMDL identifies limitations on discharge of a pollutant or stressor into the waterway over a defined time period. There also can be multiple TMDLs on a particular water body, or there can be one TMDL that addresses numerous pollutants.

The closest impaired water body to Patterson is the 29-mile reach of the San Joaquin River between the Merced River and the Tuolumne River. As shown in Table 3.8-2, six TMDL regulations are currently in effect for this water body. Note that the completion dates indicate the date by which each

TMDL must be completed and incorporated into the local Regional Water Quality Control Board's (RWQCB) Basin Plan.

Table 3.8-2: Impaired Water Body Summary

Water Body	Length	Pollutant/Stressor	Source	Proposed TMDL Completion Date
San Joaquin River (Merced River to Tuolumne River)	29 miles	Boron	Agriculture	2006
		DDT	Agriculture	2011
		Electrical Conductivity	Agriculture	2006
		Group A Pesticides	Agriculture	2011
		Mercury	Resource Extraction	2020
		Unknown Toxicity	Unknown Source	2019
Note: TMDL = Total Maximum Daily Load Source: State Water Resources Control Board, 2006.				

Drainage

The developed areas of the City of Patterson are served by a municipal storm drain system. On the west side of the City, the storm drain system discharges runoff into Salado Creek.

Project Site

The project site contains agricultural uses and does not contain formal storm drainage facilities (inlets, piping, etc.). Runoff typically will either pond onsite or flow into ditches or swales, which ultimately convey runoff to Salado Creek or Del Puerto Creek.

Flood Hazard Mapping

The City of Patterson General Plan Figure LU-2 indicates that Del Puerto Creek and its associated floodplain are subject to flooding during major storm events. Although the project site is mapped "Zone X," which signifies areas with a 0.2 percent or less chance of flooding, areas immediately north of Zacharias Road are mapped "Zone AD" and "Zone AE," signifying expected flood depths of 1 to 3 feet.

Groundwater

The City of Patterson overlies the Delta-Mendota Subbasin of the San Joaquin Valley Groundwater Basin. The Delta-Mendota Subbasin encompasses 1,170 square miles in western Fresno, Madera, Merced, and Stanislaus counties. A summary of the Delta-Mendota Subbasin characteristics is provided below, as obtained from the California Department of Water Resources' (DWR) Bulletin 118.

Hydrogeologic Formations

The geologic units that comprise the groundwater reservoir in the Delta-Mendota Subbasin consist of the Tulare Formation, terrace deposits, alluvium, and flood-basin deposits. The Tulare Formation is composed of beds, lenses, and tongues of clay, sand, and gravel that have been alternately deposited in oxidizing and reducing environments. The Corcoran Clay Member of the formation underlies the basin at depths ranging about 100 to 500 feet and acts as a confining bed.

Terrace deposits of Pleistocene age lie up to several feet higher than present streambeds. They are composed of yellow, tan, and light-to-dark brown silt, sand, and gravel with a matrix that varies from sand to clay. The water table generally lies below the bottom of the terrace deposits. However, the relatively large grain size of the terrace deposits suggests their value as possible recharge sites.

Alluvium is composed of interbedded, poorly to well-sorted clay, silt, sand, and gravel and is divided on the basis of its degree of dissection and soil formation. The flood basin deposits are generally composed of light-to-dark brown and gray clay, silt, sand, and organic materials with locally high concentrations of salts and alkali. Stream channel deposits of coarse sand and gravel are also included.

Groundwater in the Delta-Mendota subbasin occurs in three water-bearing zones. These include the lower zone, which contains confined fresh water in the lower section of the Tulare Formation; an upper zone that contains confined, semi-confined, and unconfined water in the upper section of the Tulare Formation and younger deposits; and a shallow zone that contains unconfined water within about 25 feet of the land surface. The estimated specific yield of the subbasin is 11.8 percent. Land subsidence up to about 16 feet has occurred in the southern portion of the basin because of artesian head decline.

Groundwater Level Trends

Changes in groundwater levels are based on annual water level measurements by DWR and cooperators. Water level changes were evaluated by quarter township and computed through a custom DWR computer program using geostatistics. On average, the subbasin water level has increased by 2.2 feet from 1970 through 2000. The period from 1970 through 1985 showed a general increase, topping out in 1985 at 7.5 feet above the 1970 water level. The 9-year period from 1985 to 1994 saw general declines in groundwater levels, reaching back down to the 1970 groundwater level in 1994. Groundwater levels rose in 1995 to about 2.2 feet above the 1970 groundwater level. Water levels fluctuated around this value until 2000.

Groundwater Storage

DWR estimated that the total storage capacity of the Delta-Mendota subbasin is 30.4 million acre-feet to a depth of 300 feet and 81.8 million acre-feet to the base of fresh groundwater. DWR estimated that 26.6 million acre-feet of groundwater to a depth of 300 feet was stored in this subbasin as of 1995.

Groundwater Quality

The groundwater in this subbasin is characterized by mixed sulfate to bicarbonate types in the northern and central portion with areas of sodium chloride and sodium sulfate waters in the central and southern portion.

Shallow, saline groundwater occurs within about 10 feet of the ground surface over a large portion of the subbasin. There are also localized areas of high concentrations of iron, fluoride, nitrate, and boron in the subbasin.

Local Studies of Groundwater

Groundwater studies of the “local basin” from 2002 through 2010 conducted by Kenneth D. Schmidt and Associates state: “Groundwater is present in two aquifers beneath the City of Patterson . . . water levels in both aquifers have apparently been relatively stable over the long term.”

The studies confirmed that there are essentially two aquifers underlying the Study Area: a lower, confined zone and an upper, unconfined zone. The two aquifers are separated by the thick, semi-impermeable Corcoran Clay layer. Because of the importance of understanding the sustainability of groundwater for future planning, a 6-day aquifer test was conducted by Kenneth D. Schmidt and Associates during the week of February 21, 2006. In summary, the new testing efforts resulted in the following conclusions:

1. The lower aquifer (below Corcoran Clay) transmissivity is 80,000 gallons per day per foot (gpd/ft), with a storage coefficient of 0.0003 (compared with 100,000 gpd/ft and a storage coefficient of 0.001, respectively, from 2002 report);
2. No significant downward leakage was found between the upper and lower aquifers (through the Corcoran Clay);
3. Groundwater flow is in a northwesterly direction, rather than a northeasterly direction as previously suspected;
4. Total sustainable production from the lower aquifer was higher than estimated in the 2002 study.

Natural inflows to the two aquifers underlying the Study Area were estimated by Kenneth D. Schmidt and Associates to be 3,500 acre-feet/year (upper) and 8,900 acre-feet/year (lower), based on basin hydraulic conductivity, transmissivity, and gradients.

Refer to Section 3.12, Public Services and Utilities for further discussion of groundwater supply.

3.8.3 - Regulatory Framework

Federal

Clean Water Act

Section 303 of the Clean Water Act requires states to adopt water quality standards for all surface waters of the United States. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards. (See a description of State Porter-Cologne Water Quality Control Act, below.) Standards are based on the designated beneficial use(s) of the water body. Where multiple uses exist, water quality standards must protect the most sensitive use.

Phase II

Section 402 of the Clean Water Act mandates that certain types of construction activity comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) stormwater program. In California, permitting occurs under the General Permit for Stormwater Discharges Associated with Construction Activity, issued to the State Water Resources Control Board (SWRCB) and implemented and enforced by the nine RWQCBs. The project site is within the boundaries of the Central Valley RWQCB.

The first iteration of the Phase II Rule, issued in 1999, required that construction activities that disturb land equal to or greater than 1 acre require permitting under the NPDES program.

This General Permit required all dischargers, where construction activity disturbs one (1) or more acres, to take the following measures:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP), which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off site into receiving waters.
2. Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation.
3. Perform inspections of all BMPs.

On September 2, 2009, the SWRCB adopted a revised NPDES General Permit for Storm Water Discharges Associated with Construction Activity (Order 2009-0009 DWQ). The permit will become effective on July 1, 2010, and covers construction projects that disturb 1 or more acres or that are part of a larger common plan of development that disturbs more than 1 acre in total (e.g., large linear utility projects). One of the biggest differences in the revised permit involves the specificity necessary for Best Management Practices (BMPs). Whereas the previous general permit order left the selection of BMPs to the discretion of the applicant, and allowed the applicant to present them in

qualitative terms, the revised permit now requires that applicants implement an SWPPP that includes specific BMPs, requires a greater number of BMPs, and establishes quantitative numeric effluent limitations for water quality metrics such as pH and turbidity. The specific requirements will depend on an assessment of the risk level associated with a given site. In addition, the permit now requires a Rain Event Action Plan, which must be designed to protect all exposed portions of the site within 48 hours prior to any likely precipitation event, and significant new monitoring and reporting requirements.

To obtain compliance, the landowner must file a Notice of Intent with the SWRCB. The notice is required to include the requirements listed above. When project construction is completed, the landowner must file a notice of termination.

C.3 Provisions

In 2003, the RWQCB issued a municipal stormwater permit under the National Pollutant Discharge Elimination System (NPDES) permit program. The purpose of the permit is to reduce the discharge of pollutants in stormwater to the maximum extent practicable and to effectively prohibit non-stormwater discharges into municipal storm drain systems and watercourses. The permit incorporates Provision C.3, which establishes stormwater pollution management requirements for new development and redevelopment projects.

Provision C.3 requires that certain new development and redevelopment projects incorporate post-construction stormwater pollution management measures, including stormwater treatment measures, stormwater site design measures, and source control measures, to reduce stormwater pollution after the construction of the project. These requirements are in addition to standard BMPs.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 authorized the SWRCB to provide comprehensive protection for California's waters through water allocation and water quality protection. The SWRCB implements the requirement of the Clean Water Act Section 303, indicating that water quality standards have to be set for certain waters by adopting water quality control plans under the Porter-Cologne Act. The Porter-Cologne Act established the responsibilities and authorities of the nine RWQCBs, which include preparing water quality plans for areas in the region, identifying water quality objectives, and issuing NPDES permits and Waste Discharge Requirements.

Central Valley Regional Water Quality Control Board

The Central Valley RWQCB's Water Quality Control Plan (Basin Plan) covers the Sacramento and San Joaquin river basin (which includes the project site) and consists of a designation or establishment for waters of beneficial uses to be protected, water quality objectives to protect those uses, and a program of implementation needed for achieving the objectives. Water quality objectives are defined as limits or levels of water quality constituents and characteristics established for

reasonable protection of beneficial uses or prevention of nuisance. The Porter-Cologne Act was later amended to provide the authority delegated from the Environmental Protection Agency (EPA) to issue NPDES permits.

Local

City of Patterson

General Plan

The City of Patterson General Plan sets forth the following goals and policies relevant to hydrology and water quality:

- **Goal PS-3:** To maintain an adequate level of service in the City's storm drainage system to accommodate runoff from existing and future development and to prevent property damage due to flooding.
- **Policy PS-3.2:** Expansion of drainage systems. The City shall expand and develop storm drainage facilities to accommodate the needs of existing and planned development.
- **Policy PS-3.3:** Drainage districts. The City shall form storm drainage districts as needed to ensure that storm drainage facilities are properly constructed, operated, and maintained.
- **Policy PS-3.4:** Fair share costs. The City shall, through a combination of drainage improvement fees and other funding mechanisms, ensure that new development pays its fair share of the costs of drainage system improvements.
- **Policy PS-3.5:** Pollutant requirements. Future drainage system discharges shall comply with applicable state and federal pollutant discharge requirements.
- **Policy PS-3.6:** National Flood Insurance Program. The City shall continue to participate in the National Flood Insurance Program. To this end, the City shall ensure that its regulations are in full compliance with standards adopted by the Federal Emergency Management Agency.
- **Policy PS-3.8:** Finish floor elevation – non-residential development. Non-residential development shall be anchored and flood-proofed to prevent damage from the 100-year flood or, alternatively, elevated to at least 12 inches above the 100-year flood level.
- **Policy PS-3.10:** Storm drainage improvements required. Construction of storm drainage improvements shall be required, as appropriate, to prevent flooding during periods of heavy rainfall. Where feasible, storm drainage facilities should continue to be combined with park facilities.
- **Policy PS-3.11:** Conditions for grading. The City shall impose appropriate conditions on grading projects performed during the rainy season to ensure that silt is not conveyed to storm drainage systems.
- **Policy PS-3.12:** Detention basins. The City shall ensure that stormwater detention basin designs provide safety for the public, are visually appealing and unobtrusive, incorporate wildlife habitat, and, where feasible, offer recreational opportunities.

- **Policy PS-3.13:** Surface pollutant control. The City shall require new development to incorporate runoff control measures to minimize discharge of surface pollutants into drainage systems. Examples of potential programs include:
 - The use of “bioswales” and similar features (such as infiltration trenches, filter trips, and vegetated buffers) to trap contaminants;
 - Installation of grease/oil separators to keep these contaminants out of storm runoff;
 - Regular street sweeping programs to prevent the buildup of oil, grease, and other contaminants and keep them from being swept into creeks and rivers;
 - Minimizing pesticide use and promoting the use of natural pest controls;
 - Encouraging the installation of “gray water” systems.
 - Provisions in new development aimed at protecting native water courses, wetlands or other sensitive habitats from adverse water quality impacts associated with post-development storm water runoff (i.e., hydromodification plan).
- **Policy PS-3.14:** Erosion control. The City shall require new development to incorporate erosion control measures to minimize sedimentation of streams and other natural drainage features.
- **Policy PS-3.15:** Groundwater recharge. Where feasible, storm drainage facilities shall be designed to assist with, and complement, the water supply program in regards to groundwater recharge.
- **Goal HS-2:** To prevent loss of life, injury, and property damage due to flooding.
- **Policy HS-2.1:** Flood control management. The City shall prepare and adopt flood management plans and practices aimed at protecting life and property from the harmful effects of flooding. As part of this effort, the City shall establish criteria for:
 - a. Evaluating whether new development should be located in flood hazard zones;
 - b. Identifying construction methods or other methods to minimize damage if new development is located in flood hazard zones, and
 - c. Maintaining the structural and operational integrity of essential public facilities during flooding.
- **Policy HS-2.6:** Flood protection for non-residential development. Non-residential development shall be anchored and flood-proofed to prevent damage from the 100-year flood or, alternatively, elevated to at least 12 inches above the 100-year flood level.
- **Policy HS-2.8:** Provision of storm drains. Construction of storm drainage improvements shall be required, as appropriate, to prevent flooding during periods of heavy rainfall.
- **Policy HS-2.9:** Prevention of siltation. The City shall impose appropriate conditions on grading projects performed during the rainy season to ensure that silt is not conveyed to storm drainage systems.
- **Policy HS-2.10:** Flooding impacts of new development. New development with the potential to increase flooding impacts on adjoining or downstream properties shall be prohibited.
- **Policy HS-2.12:** Buildable site. Parcels shall not be created upon which the presence of easements, floodplain, marsh or riparian habitat, or other features would leave insufficient land to build and operate structures. This policy shall not apply to open space lots specifically

created for dedication to the City or another appropriate party for habitat protection, flood control, drainage, or wetland maintenance.

- **Policy HS-2.13:** Bridge construction. New and modified bridge structures shall not cause an increase in water surface elevations of the 100-year floodplain exceeding one foot, unless analysis clearly indicates that the physical and/or economic use of upstream or downstream property will not be adversely affected.
- **Policy HS-2.14:** Runoff control. The City shall require all new urban development projects to incorporate runoff control measures to minimize peak flows of runoff and/or assist in financing or otherwise implementing comprehensive drainage plans. All such control measures shall consider potential affects to adjacent property owners.
- **Policy HS-2.16:** Flood hazard mitigation prior to development. The City shall not approve new development in areas subject to a 100-year flood event, based on Federal Emergency Management Agency (FEMA) or on other updated mapping acceptable to the City, unless and until the flood hazard has been mitigated, Such mitigation may be accomplished by one, or a combination of, the following:
 - Compliance with Title 17 of the City’s Municipal Code, Flood Hazard areas.
 - Installation of flood control improvements along Del Puerto Creek and/or Salado Creek.
 - Avoidance of flood prone areas.
- **Policy HS-2.17:** Flood hazard mitigation prior to development. The City shall require any development on land subject to a 100- year flood event, based on Federal Emergency Management Agency (FEMA) or on other updated mapping acceptable to the City, to conform to National Flood Insurance Program (NFIP) standards.
- **Policy HS-2.18:** Low Impact Development. New development shall incorporate provisions for low impact development as defined by as minimizing or eliminating pollutants in storm water through natural processes and maintaining pre-development hydrologic characteristics, such as flow patterns, surface retention, and recharge rates.

Municipal Code

The Patterson Municipal Code establishes the following requirements that pertain to hydrology and water quality:

- Title 13, Chapter 13.32 establishes requirements for stormwater quality discharge and control. The chapter prohibits discharges of pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards. The chapter codifies various federal and state requirements for stormwater pollution prevention and requires compliance with these statutes and regulations.
- Title 16, Chapter 16.64 requires that applicants proposing divisions of land pay fees for constructing planned drainage facilities prior to the filing of any final map or parcel map.

- Title 17, Chapter 17.12 sets forth standards for development in flood hazard areas. The chapter requires that new construction comply with federal floodplain safety requirements, including elevating structures above the 100-year flood elevation.

3.8.4 - Methodology

Michael Brandman Associates analyzed the proposed project's potential to cause adverse impacts on hydrology and water quality utilizing several resources. The Western Regional Climate Center provided information about meteorology and climate. The West Patterson Projects EIR provided descriptions of waterways and hydrological characteristics of the Patterson area. Bulletin 118, San Joaquin Valley Groundwater Basin, Delta-Mendoza Subbasin, dated January 2006 and published by the California Department of Water Resources, provided information about groundwater. Project plans were reviewed for descriptions of drainage facilities.

3.8.5 - Thresholds of Significance

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

- a) Violate any water quality standards or waste discharge requirements?
- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?)
- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?
- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?
- e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
- f) Otherwise substantially degrade water quality?
- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?

- i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (Refer to Section 7, Effects Found Not To Be Significant.)
- j) Inundation by seiche, tsunami, or mudflow? (Refer to Section 7, Effects Found Not To Be Significant.)

3.8.6 - Project Impacts and Mitigation Measures

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

Short-Term Water Quality

Impact HYD-1: Construction activities associated with the proposed project have the potential to degrade water quality in downstream water bodies.

Impact Analysis

This impact addresses checklist items a), c), e), and f) in the context of short-term water quality impacts from construction activities.

West Patterson Business Park Expansion Project

Project implementation would involve the development of up to 11.75 million square feet of new commercial and industrial land uses on 1,119 gross acres over a 20- to 30-year period. During these activities, there would be the potential for surface water to carry sediment from onsite erosion and small quantities of pollutants into the stormwater system and local waterways, including Del Puerto Creek, the California Aqueduct, and the Delta-Mendota Canal. Soil erosion may occur along project boundaries during construction in areas where temporary soil storage is required. Small quantities of pollutants have the potential for entering the storm drainage system, thereby potentially degrading water quality.

Construction of the proposed project would also require the use of gasoline and diesel-powered heavy equipment, such as bulldozers, backhoes, water pumps, and air compressors. Chemicals such as gasoline, diesel fuel, lubricating oil, hydraulic oil, lubricating grease, automatic transmission fluid, paints, solvents, glues, and other substances would likely be utilized during construction. An accidental release of any of these substances could degrade the water quality of the surface water runoff and add additional sources of pollution into the drainage system.

The NPDES stormwater permitting programs regulate stormwater quality from construction sites. Under the NPDES permitting program, the preparation and implementation of SWPPPs are required for construction activities that disturb more than 1 acre in area. The SWPPP must identify potential sources of pollution that are reasonably expected to affect the quality of stormwater discharges as well as identify and implement BMPs that ensure the reduction of these pollutants during stormwater

discharges. Federal and state law provide that BMPs must achieve specific quantitative numeric effluent limitations, and monitoring and reporting requirements will apply.

Mitigation Measure HYD-1 is proposed that would require the project applicant to prepare and implement an SWPPP prior to the issuance of grading or building permits. The implementation of the mitigation measure would ensure that runoff associated with short-term construction activities would not contribute to the degradation of water quality in downstream waterways, particularly those with TMDLs in effect. Impacts would be reduced to a level of less than significant.

Offsite Utility Alignments

Construction of the offsite utility alignments would involve trenching, pipe placement, and backfill. Similar to the construction of the business park expansion, there would be the potential for impacts to short-term water quality. Implementation of Mitigation Measure HYD-1 would ensure that runoff associated with short-term construction activities of the utility alignments would not contribute to the degradation of water quality in downstream waterways. Impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-1 Prior to the issuance of grading permits or building permits for each phase of the project (whichever occurs first), the project applicant shall prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) to the Central Valley RWQCB that identifies specific actions and Best Management Practices (BMPs) to prevent stormwater pollution during construction activities in accordance with the revised NPDES General Permit for Storm Water Discharges Associated with Construction Activity (Order 2009-0009 DWQ). The City of Patterson shall confirm that the RWQCB has approved the SWPPP prior to issuance of grading or building permits. The SWPPP shall identify a practical sequence for BMP implementation and maintenance, site restoration, contingency measures, responsible parties, and agency contacts. The SWPPP shall include but not be limited to the following elements:

- Temporary erosion control measures shall be employed for disturbed areas.
- No disturbed surfaces shall be left without erosion control measures in place during the winter and spring months.
- Sediment shall be retained onsite by a system of sediment basins, traps, or other appropriate measures.
- The construction contractor shall prepare Standard Operating Procedures for the handling of hazardous materials on the construction site to eliminate or reduce discharge of materials to storm drains.

- BMP performance and effectiveness shall be determined either by visual means where applicable (e.g., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination (such as inadvertent petroleum release) is required by the RWQCB to determine adequacy of the measure.
- In the event of significant construction delays or delays in final landscape installation, native grasses or other appropriate vegetative cover shall be established on the construction site as soon as possible after disturbance, as an interim erosion control measure throughout the wet season.

Level of Significance After Mitigation

Less than significant impact.

Long-Term Water Quality

Impact HYD-2:	Operational activities associated with the proposed project have the potential to degrade water quality in downstream water bodies.

Impact Analysis

This impact addresses checklist items a), c), e), and f) in the context of long-term water quality impacts from operational activities.

West Patterson Business Park Expansion Project

The project site currently does not contain any impervious surfaces; however, it was previously graded and disturbed and used primarily for agricultural purposes. Development of the proposed project would increase impervious surface coverage on the project site by up to 16.75 acres through construction of buildings, parking areas, and internal roadways, and sidewalks. The increase in impervious surface coverage would create the potential for discharge of urban pollutants into downstream waterways including Del Puerto Creek, the California Aqueduct, and the Delta-Mendota Canal. Leaks of fuel or lubricants, tire wear, and fallout from exhaust contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff transported to receiving waters. Runoff from the proposed landscaped areas may contain residual pesticides and nutrients.

Mitigation is proposed that would require the project applicant to prepare and submit a stormwater quality management plan to the City of Patterson for review and approval prior to issuance of building permits for the proposed project. The plan would require the project applicant to document various stormwater quality control measures that would be in effect during project operations to ensure that runoff associated with operational activities would not contribute to the degradation of water quality in downstream waterways, particularly those with TMDLs in effect. Impacts would be reduced to a level of less than significant.

Offsite Utility Alignments

All three offsite utility alignments would be located underground and would not have the potential to generate polluted runoff. As such, none of them would have the potential to degrade water quality in downstream water bodies after construction is complete.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-2 Prior to the issuance of building permits for the proposed project, the project applicant shall submit a stormwater quality management plan to the City of Patterson for review and approval. The stormwater quality management plan shall identify Low Impact Development techniques and pollution prevention measures and practices to prevent polluted runoff from leaving the project site. Examples of stormwater pollution prevention measures and practices that may be included in the plan but are not limited to:

- Strategically placed bioswales and landscaped areas that promote percolation of runoff
- Pervious pavement
- Roof drains that discharge to landscaped areas
- Trash enclosures with screen walls and roofs
- Stenciling on storm drains (e.g., “No Dumping”)
- Curb cuts in parking areas to allow runoff to enter landscaped areas
- Rock-lined areas along landscaped areas in parking lots
- Catch basins
- Oil/water separators
- Regular sweeping of parking areas and cleaning of storm drainage facilities
- Employee training to inform store personnel of stormwater pollution prevention measures

Level of Significance After Mitigation

Less than significant impact.

Groundwater

Impact HYD-3: The proposed project would not deplete groundwater supplies or substantially interfere with groundwater recharge.

Impact Analysis

This impact addresses checklist item b) in the context of potential impacts on groundwater supplies and recharge.

West Patterson Business Park Expansion Project

This impact will assess whether the proposed project would delete groundwater supplies or interfere with groundwater recharge. Each issue is addressed separately.

Groundwater Supplies

The City of Patterson would provide potable water service to the proposed project. The project applicant would use private onsite wells for non-potable irrigation use.

As discussed in greater detail in Section 3.12, Public Services and Utilities, the City of Patterson overlies the Delta-Mendota Subbasin, which is part of the larger San Joaquin River Hydrologic Region. The Delta-Mendota Subbasin is not considered to be in a state of overdraft.

Within the Patterson area, several studies conducted by Ken Schmidt & Associates during the past 10 years have indicated that groundwater occurs within two aquifers.

- The lower aquifer is considered “confined” and has the better water quality of the two aquifers. The City pumps water for municipal use from this aquifer, which has better water quality, which is estimated to yield 8,900 acre-feet per year.
- The upper aquifer is considered “unconfined” and has lower water quality than the lower aquifer. Groundwater from this aquifer is used for non-potable irrigation use and its yield is estimated to be 3,500 acre-feet per year.

When the lower aquifer and upper aquifer groundwater supplies are combined, the total available groundwater supply in the Patterson area is estimated to be a maximum of 12,500 acre-feet per year on an average annual basis.

As discussed in Section 3.12, Public Services and Utilities, the proposed project is estimated to demand 1,397 acre-feet per year, of which 742 acre-feet are for potable use and 654 acre-feet are for non-potable use. These values are included in the projected water consumption values contained in the 2010 City of Patterson Urban Water Management Plan for Year 2032, which estimates a total of 6,986 acre-feet of potable demand (lower aquifer) and 3,220 acre-feet of non-potable demand (upper aquifer). The Urban Water Management Plan’s 2032 estimates for potable consumption (6,986 acre-feet) and non-potable consumption (3,220 acre-feet) are less than the projected available supply from both aquifers, as estimated by Ken Schmidt & Associates (8,900 acre-feet [potable] and 3,500 acre-feet [non-potable]).

For the reasons, the proposed project would not deplete groundwater supplies. Impacts would be less than significant.

Groundwater Recharge

The proposed project’s storm drainage plan (Exhibit 2-9a and Exhibit 2-9b) depict nine stormwater basins within the project site ranging in area from 1.45 to 12.36 acres. Basins would consist of both

detention and recharge: the detention basins would be located in areas where soil conditions are unsuitable for percolation, and recharge basins would be located in areas where soil conditions are suitable for percolation. Runoff would generally be conveyed in a south-to-north direction. A force main would be used to convey runoff from a detention basin in the KDN portion of the site to the Arambel portion of the site where the recharge basins would be located.

In summary, the proposed project's stormwater plan is predicated on the use of groundwater recharge as the principal means of managing runoff. This would facilitate groundwater recharge, primarily into the upper aquifer. Impacts would be less than significant.

Offsite Utility Alignments

The offsite utility alignments would be used to convey effluent from the project site. They would not require additional groundwater to be used, nor would they interfere with groundwater recharge. No impacts would occur.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Drainage

Impact HYD-4:	The proposed project would increase impervious surface coverage and, therefore, would require new drainage facilities to prevent downstream flooding.

Impact Analysis

This impact addresses checklist item d) in the context of the potential for development activities to increase runoff and susceptibility to downstream flooding and/or erosion that is due to increased volumes or peak flows.

West Patterson Business Park Expansion Project

The development of the proposed project would result in an increase in impervious surface coverage on the project site, creating the potential for greater volumes of runoff to leave the site and enter downstream waterways, which could cause flooding and erosion problems.

The proposed project would implement a storm drainage system consisting of underground piping and detention basins. Pipelines ranging from 12 inches to 72 inches in diameter would convey runoff to nine stormwater basins within the project site ranging in area from 1.45 to 12.36 acres. In accordance with the City of Patterson's standards, these basins would be sized for a 50-year, 24-hour storm event, which is equivalent to 2.24 inches of rainfall.

Basins would consist of both detention and recharge: the detention basins would be located in areas where soil conditions are unsuitable for percolation, and recharge basins would be located in areas where soil conditions are suitable for percolation. Runoff would generally be conveyed in a south-to-north direction. A force main would be used to convey runoff from a detention basin in the KDN portion of the site to the Arambel portion of the site where the recharge basins would be located.

An approximately 19-acre portion of the KDN Retail Center/Business Park adjacent to Rogers Road would discharge runoff to an existing 18-inch storm drain line located within Keystone Pacific Parkway, which ultimately outlets into Salado Creek. During peak storm events, stormwater would be detained onsite in a basin. Once the storm event is over and the City's municipal storm drain system is clear, runoff will be released into the City system at a controlled rate. This design is intended to avoid creating a need for downstream improvements to the City's municipal storm drain system.

As such, the proposed project's storm drainage system would capture and detain runoff, thereby preventing downstream flooding and erosion. To ensure that the proposed project's storm drainage system is appropriately designed and implemented, mitigation is proposed requiring the project applicant to submit storm drainage plans to the City of Patterson for review and approval. With the implementation of this mitigation measure, drainage impacts would be reduced to a level of less than significant.

Note that the proposed project would not use or rely upon any existing storm drainage facilities that serve the Villa Del Lago commercial project to the south of the project site and also would not discharge runoff into the Delta-Mendota Canal.

Offsite Utility Alignments

The offsite utility alignments would not result in increased impervious surfaces and, therefore, would not require new drainage facilities to prevent downstream flooding or erosion. No impacts would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-4 Prior to issuance of grading permits for the proposed project, the project applicant shall retain a qualified civil engineer to prepare and submit a detailed drainage plan to the City of Patterson for review and approval. The drainage plan shall demonstrate compliance with City of Patterson standards regarding drainage designs, including sizing basins to accommodate a 50-year, 24-hour storm event. The approved plan shall be incorporated into the project design and final improvement plans.

Level of Significance After Mitigation

Less than significant impact.

100-Year Floodplains

Impact HYD-5: **The proposed project may place structures within a 100-year flood hazard area that may have the potential to divert flood flows or be subjected to flood hazard.**

Impact Analysis

This impact addresses checklist items g) and h) in the context of locating structures within 100-year floodplains.

West Patterson Business Park Expansion Project

As previously discussed, the City of Patterson General Plan Figure LU-2 indicates the Del Puerto Creek and its associated floodplain are subject to flooding during major storm events.

Within the project site boundaries, the Del Puerto Creek channel is mapped as a 100-year flood hazard area. However, the portions of the project site outside the creek channel are not within the 100-year flood hazard area.¹ As such, the proposed project would not locate structures within a 100-year flood hazard area. Exhibit 3.8-2 depicts the 100-year flood hazard areas associated with Del Puerto Creek as they relate to the locations of proposed development.

Furthermore, Mitigation Measure BIO-4 would require the project applicant demonstrate that physical improvements associated with the proposed project maintain a minimum 100-foot setback from the Del Puerto Creek high water mark, or outside edge of existing riparian vegetation, whichever is greater. As such, the proposed project would not place structures within a 100-year flood hazard area that may have the potential to divert flood flows or be subjected to flood hazard. Impacts would be less than significant.

Offsite Utility Alignments

The offsite utility alignments would not be located underground and outside areas designated as 100-year flood plain. As such, they would not have the potential to place structures within a 100-year flood hazard area that may have the potential to divert flood flows or be subjected to flood hazard. No impacts would occur.

Level of Significance Before Mitigation

Potentially significant impact.

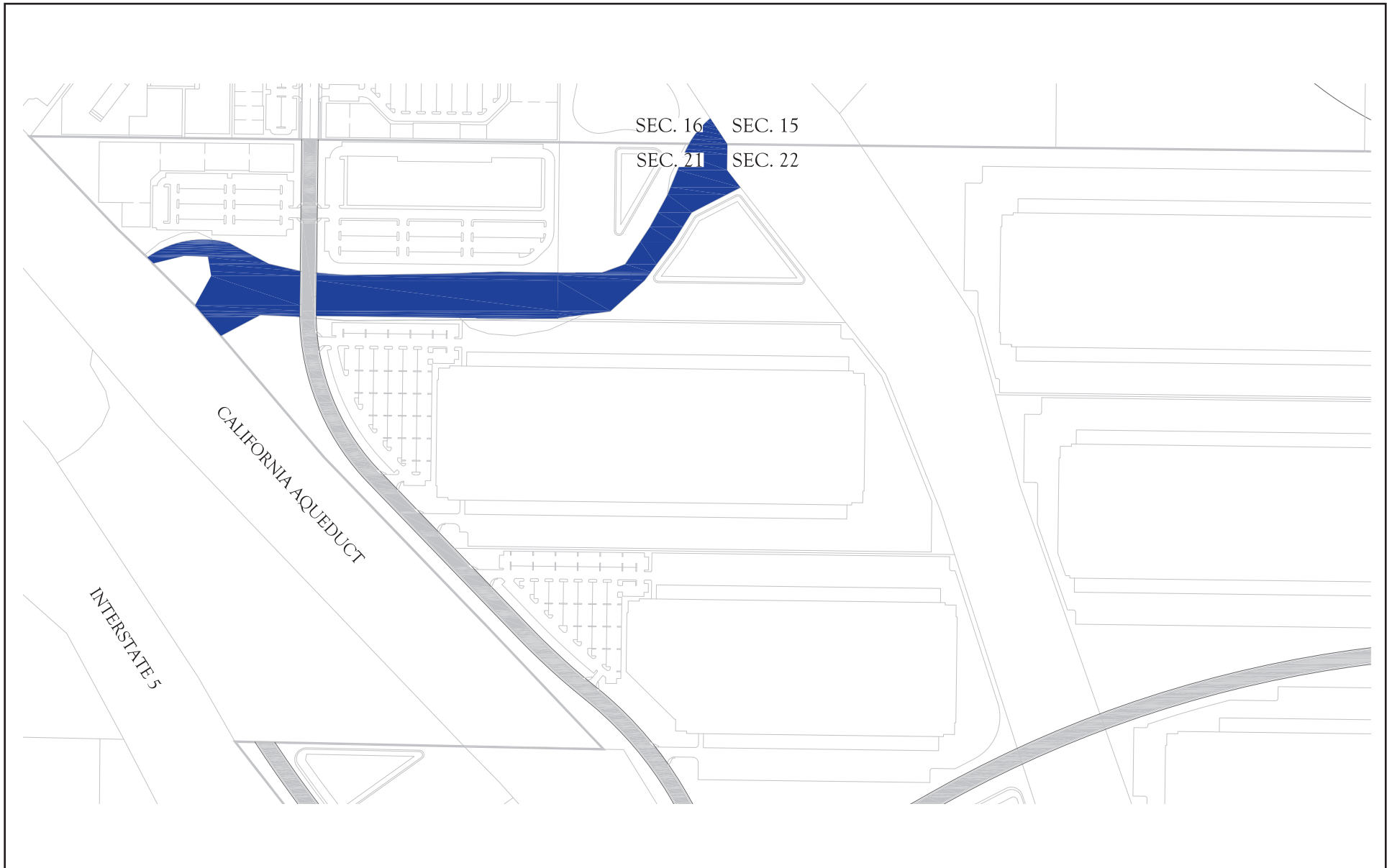
Mitigation Measures

Implement Mitigation Measure BIO-4.

Level of Significance After Mitigation

Less than significant impact.

¹ A small portion of the project site near Del Puerto Creek was previously mapped as being within the 100-year flood plain of the waterway. The applicant received a Letter of Map Revision from FEMA, dated June 16, 2011, which reduced the extent of the 100-year flood plain, thereby removing the developable portion of the project site from the flood plain.



Source: City of Patterson, Stanislaus County, State of California



Michael Brandman Associates

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Exhibit 3.8-2 100-Year Flood Hazard Areas

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Other Water Quality Considerations

Impact HYD-6: **The proposed project may have the potential to substantially degrade water quality.**

Impact Analysis

This impact addresses checklist item f) in the context of impacts on the California Aqueduct and Delta-Mendota Canal.

West Patterson Business Park Expansion Project

The proposed project would develop lands adjacent to the California Aqueduct and Delta-Mendota Canal and construct two new roadway crossings across the Delta-Mendota Canal and a new crossing across the California Aqueduct, thereby requiring coordination with appropriate agencies for each waterway. It is expected that each agency will require offsetting removal of existing waterway crossings within the project boundaries to yield no net increase in the number of spans.

California Aqueduct

The proposed project would result in development adjacent to and potentially within the California Aqueduct right-of-way, including a new crossing. Construction and operation of the proposed project may affect existing drainage and cross drainage structures near the California Aqueduct and may have the potential to affect water quality within the aqueduct. As such, mitigation is proposed that would require an encroachment permit from the Department of Water Resources. An encroachment permit serves as the primary means for monitoring the orderly and controlled construction, operations, and maintenance of improvements, while assuring the maximum protection of the California Aqueduct. The California Department of Water Resources Division of Operations and Maintenance's Encroachment Permit Guidelines provide specific requirements for any alteration within the Aqueduct's right-of-way, including those related to drainage. Approval of an encroachment permit would ensure that the California Aqueduct and its water would be protected during construction and operation of the proposed project. As such, impacts would be less than significant.

Delta Mendota Canal

The proposed project would result in development adjacent to and within the Delta Mendota Canal right-of-way, including two canal crossings. The Delta Mendota Canal is operated and maintained by the San Luis & Delta-Mendota Water Authority under a contract agreement with the United States Bureau of Reclamation. Construction and operation of the proposed project may affect existing drain inlets, and all storm drainage must be conveyed over or under the Canal. As such, mitigation is proposed that would require the project applicant to submit project plans for review and approval by the San Luis & Delta-Mendota Water Authority and incorporate resulting recommendations to ensure impacts to the Canal are reduced to less than significant.

Offsite Utility Alignments

The offsite utility alignments would not be located adjacent to the California Aqueduct. However, Alignment 2 would be located directly to the east of the Delta Mendota Canal between Rogers Road

and Sperry Avenue. Implementation of Mitigation Measure HYD-6b would ensure potential impacts to the canal would be reduced to a less than significant level.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

- MM HYD-6a** Prior to any construction activities that would involve work within the California Aqueduct right-of-way, the project applicant shall obtain from the California Department of Water Resources an Encroachment Permit in accordance with the Division of Operations and Maintenance Encroachment Permit Guidelines. Conditions of the Encroachment Permit shall be incorporated into project plans, which may include but may not be limited to installation of water pollution prevention measures along the California Aqueduct (e.g., fencing, full span roadway crossings, and avoidance of runoff discharge into the waterway).
- MM HYD-6b** Prior to any construction activities that would involve work within the Delta-Mendota Canal right-of-way, the project applicant shall submit project grading, building, and drainage plans to the San Luis & Delta-Mendota Water Authority for review and approval. The project applicant shall incorporate measures into the proposed project that protect the Delta Mendota Canal as recommended by the Water Authority. Such recommendations may include but may not be limited to:
- Bridge crossings with public walkways must be designed to prevent unwanted debris from being discharged into the canal.
 - No roadway drainage shall be allowed to be discharged into the canal.
 - All roadway crossing support systems shall be full span.
 - Existing drain inlets shall be plugged.
 - All storm drainage shall be conveyed either over or under the canal.

Level of Significance After Mitigation

Less than significant impact.

3.9 - Land Use

3.9.1 - Introduction

This section describes the existing land use and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on site reconnaissance; review of the City of Patterson General Plan, the Patterson Municipal Code, the Stanislaus County General Plan, the Stanislaus County Airport Land Use Commission Plan; and the proposed West Patterson Business Park Expansion Project Master Development Plan.

3.9.2 - Environmental Setting

Land Use

Project Site

The project site contains cultivated agricultural land uses planted as orchards and row crops. The California Aqueduct and the Delta-Mendota Canal traverse the project site in a northwest-southeast direction. Del Puerto Creek crosses the northwestern portion of the project site. A single-family residence and a cluster of agricultural structures are located in the center of the site, adjacent to the Delta-Mendota Canal. Paved and unpaved roads provide circulation within the project site. The project site contains gently sloping relief that ranges from approximately 160 feet above mean sea level in the northeast corner to approximately 220 feet above mean sea level in the southern portion of the site. The California Aqueduct sits upon a raised embankment that is approximately 20 to 60 feet higher than the rest of the site.

A high-voltage power line parallels the west side of the California Aqueduct. Another high-voltage power line connects this line with the Turlock Irrigation District (TID) substation located along Rogers Road. Overhead utility lines are located along Rogers Road and Zacharias Road.

A 1.3-million-gallon water storage tank (Gateway Tank Site) is located in the southern portion of the project site near the California Aqueduct.

Surrounding Area

West and South

Interstate 5 (I-5) and the California Aqueduct form the western and southern boundary of the project site. The freeway sits upon atop a raised embankment that ranges from 80 to 160 feet above the elevation of the project site, while the aqueduct sits atop a raised embankment that ranges from 20 to 60 feet above the elevation of most of the project site. The Diablo Range foothills are located west of the freeway.

North

Zacharias Road forms the northern boundary of the project site. North of the roadway are orchards. Reaches of the California Aqueduct, Delta-Mendota Canal, and Del Puerto Creek extend north of the project site.

East

Rogers Road and the Villa del Lago highway commercial center form the eastern boundary of the project site. Land uses east of Rogers Road consist of orchards, row crops, and distribution centers associated with the existing West Patterson Business Park. The Villa del Lago highway commercial center is located south of the Delta-Mendota Canal and primarily consists of visitor-serving commercial uses, including hotels, gas stations, restaurants, and a recreational vehicle park.

On the west side of Rogers Road, but not a part of the project site, is an approximately 3-acre TID electrical substation.

Land Use Designations

Project Site

The County of Stanislaus General Plan designates the project site “Agriculture” and the Stanislaus County Zoning Ordinance zones the site “General Agriculture – 40 Acre Minimum (A-2-40).”

The City of Patterson General Plan designates the project site “Light Industrial” and “General Commercial.” The City’s land use designations are non-binding because the project site is currently located in unincorporated Stanislaus County.

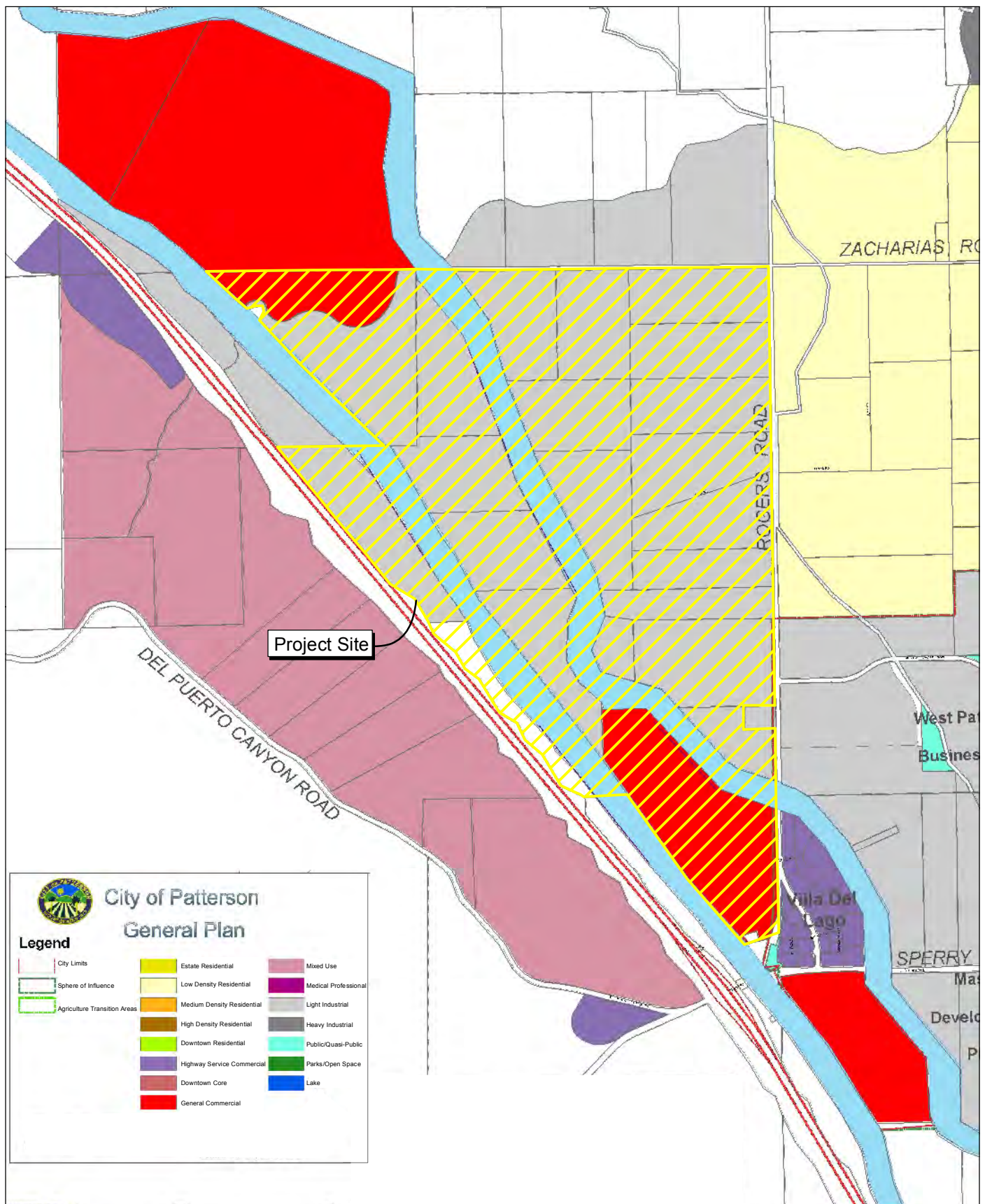
The City’s General Plan land use designations are shown in Exhibit 3.9-1. The Patterson Zoning Ordinance’s land use designations are shown in Exhibit 3.9-2.

Surrounding Land Uses

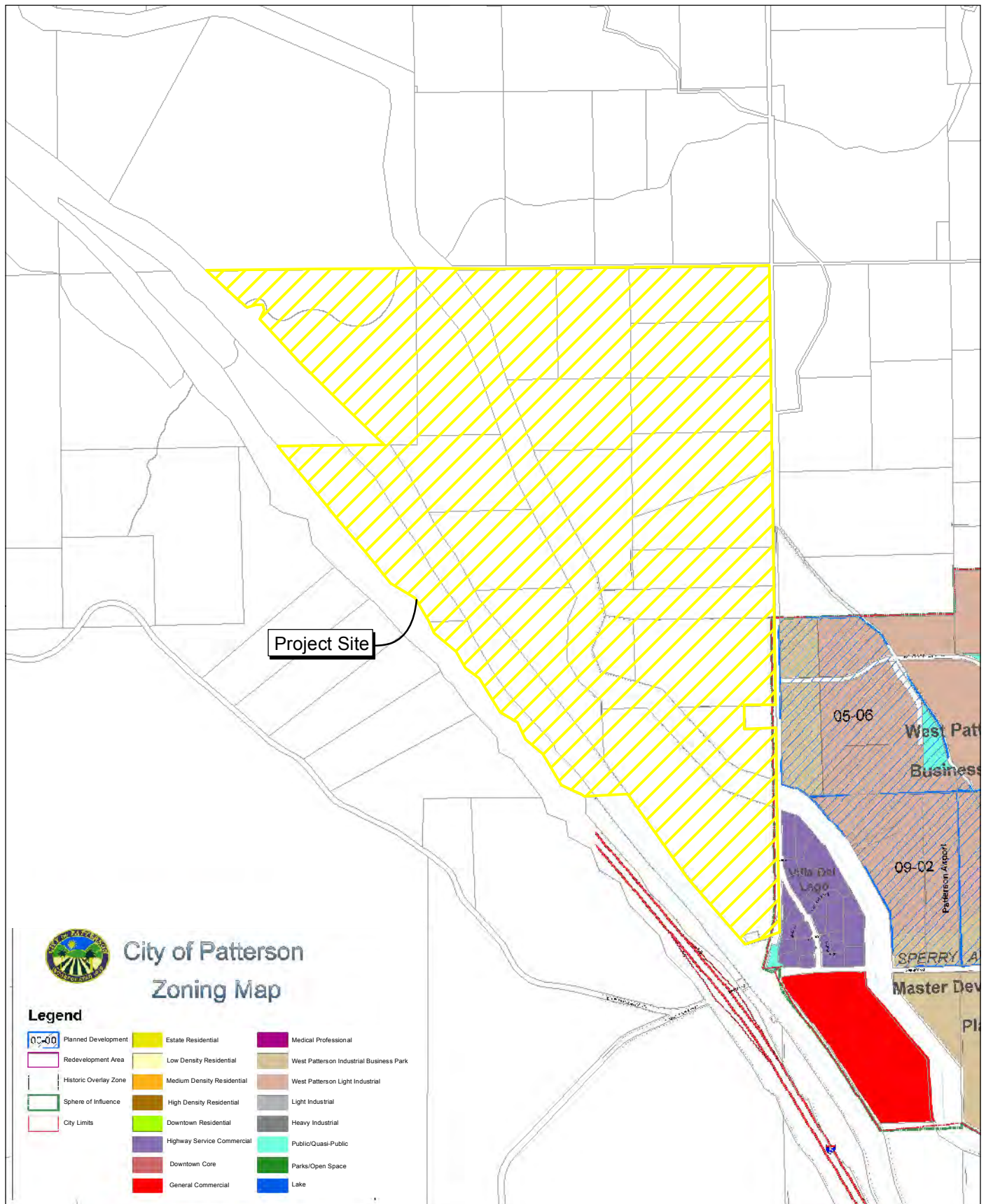
Table 3.9-1 summarizes the land use designations of the land uses surrounding the project site.

Table 3.9-1: Surrounding Land Use Designations

Land Use	Relationship to Project Site	Jurisdiction	Land Use	
			General Plan	Zoning
Diablo Range foothills	West	Unincorporated Stanislaus County	Agriculture	General Agriculture – 40 Acre Minimum (A-2-40)
Agriculture (Orchards)	North	Unincorporated Stanislaus County	Agriculture	General Agriculture – 40 Acre Minimum (A-2-40)
Agriculture (Orchards)	East	Unincorporated Stanislaus County	Agriculture	General Agriculture – 40 Acre Minimum (A-2-40)
West Patterson Business Park	East	City of Patterson	Light Industrial	West Patterson Industrial Business Park (IBP) – Planned Development Overlay
Villa del Lago highway commercial center	East	City of Patterson	Highway Service Commercial	Highway Service Commercial (HSC)
Undeveloped land/Water storage tank	South	City of Patterson	Highway Service Commercial	Highway Service Commercial (HSC)
Note: General Plan and Zoning reflect the current jurisdiction each surrounding land use is located within. Source: City of Patterson, 2011. County of Stanislaus, 2011.				



Source: ESRI Aerial Imagery, City of Patterson, CA, General Plan, 2010.



Source: ESRI Aerial Imagery, City of Patterson, CA, Zoning Map, January, 2011.

Patterson Airport

The Patterson Airport is located approximately 0.5 mile east of the project site. The airport is privately owned and supports small agricultural aircraft and, on occasion, small recreational aircraft.

Land use within the Patterson Airport Land Use Planning Area is subject to the recommendations of the Stanislaus County Airport Land Use Commission Plan. The project site is located in Conditions Area 4 (“Other Land within the Airport Planning Boundary”) of the Airport Land Use Planning Area. Exhibit 3.9-3 depicts the airport land use compatibility zones in the project vicinity. As established by the Airport Land Use Commission Plan, all commercial and industrial land uses are classified as “Compatible” within Conditions Area 4.

3.9.3 - Regulatory Framework

State

State Aeronautics Act

The State Aeronautics Act requires each county with an airport to establish an Airport Land Use Commission to guide development and land use activities around airports, in order to protect public safety and ensure that land uses near airports do not interfere with aviation operations. The Stanislaus County Airport Land Use Commission regulates land use around the Patterson Airport by requiring compliance with the Stanislaus County Airport Land Use Commission Plan. In certain circumstances, local governments have the ability to override the decisions of the Airport Land Use Commission.

Local

City of Patterson

General Plan

The City of Patterson General Plan provides a blueprint for growth within the Patterson city limits and Sphere of Influence. The General Plan was adopted by the Patterson City Council on November 30, 2010. The General Plan contains the following topical chapters: Land Use, Housing, Community Design, Economic Development, Circulation, Air Resources and Climate Change, Public Services, Parks, Recreation and Cultural Resources, Health and Safety (Noise, Safety), Natural Resources (Conservation and Open Space), and Administration and Implementation. The General Plan includes the goals, policies, standards, implementation programs, quantified objectives, a draft land use diagram, and a draft circulation plan diagram that constitute the formal policy of the City of Patterson for land use, development, and environmental quality.

Municipal Code

The Patterson Municipal Code establishes specific regulations for land use activities and development within the City of Patterson. Title 18, Zoning, contains the City of Patterson Zoning Code, which promotes and protects the public health, safety, peace, morals, comfort, convenience, and general welfare of the public, and insures the orderly development of the City.

Parking

Chapter 18 Section 18.72 of the City of Patterson Municipal Code establishes minimum standards to ensure adequate onsite parking is provided. The number of spaces required depends on the use. Landscaping is also required within parking lots and trees must be planted at a minimum ratio of one tree per 10 parking spaces. Pursuant to the City's planned development provisions, the City may allow modification of requirements established by other ordinances, including buildings, structures, lot sizes, open spaces, and parking, while ensuring compliance with and implementation of the General Plan.

Signage

Municipal Code Chapter 18.90 establishes regulations that limit the placement, type, size, maintenance, and number of signs allowed within the City. The allowable sign area for the largest wall sign on a building facade shall not exceed 7 percent of the area of the building façade on which the sign is mounted. In cases where illuminated signs are proposed, the Municipal Code encourages this to be accomplished via lights shining on the sign or individually mounted, internally lit letters. A sign permit or, if applicable, approval of a master sign plan is required. A master sign plan is required for nonresidential project with four or more tenants and where major rehabilitation work is done on an existing nonresidential project with four or more tenants, and this work involves exterior remodeling and/or modification to 50 percent or more of the existing signs on the site within a 1-year period. The City's planning director has the authority to approve a sign permit or master sign plan, as well as refer a sign permit or master sign plan application to the Planning Commission for design review and a decision.

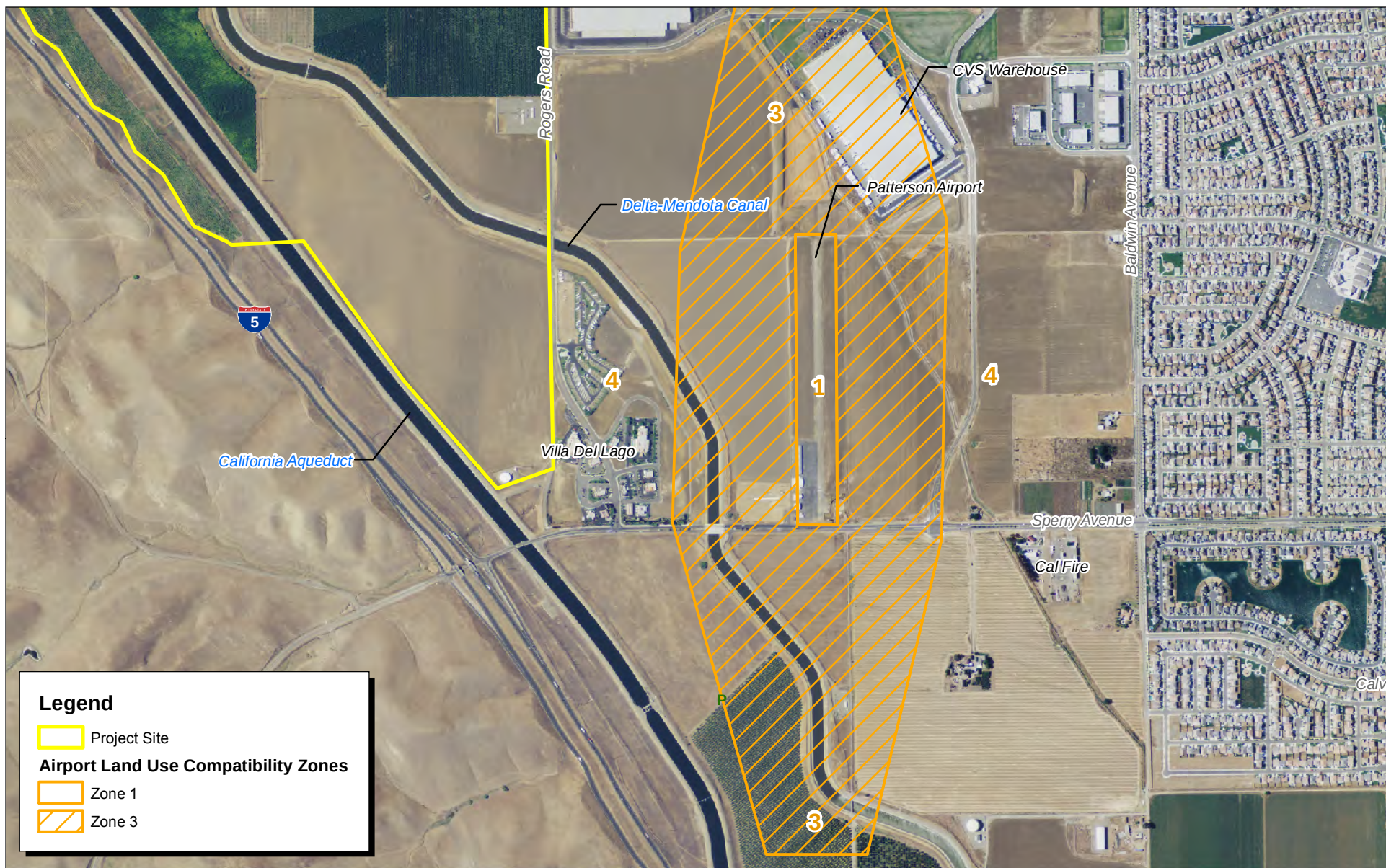
Freestanding shopping center identification (pylon) signs are limited to 8 feet in height, while freestanding monument signs are limited to 8 feet in height.

Architectural and Site Plan Review

Municipal Code Section 18.94 requires architectural and site plan review of development in order to promote more comprehensive and proficient design and planning. Such review promotes orderly and compatible development, encourages appropriate uses of land within the City, and ensures site development (building appearance, landscaping, signage) complies with applicable standards, thereby maximizing aesthetic considerations and minimizing adverse environmental impacts.

Stanislaus County*Stanislaus County Airport Land Use Commission Plan*

The Stanislaus County Airport Land Use Commission Plan identifies land use compatibility policies and potential conflicts applicable to existing and future development in the vicinity of all Stanislaus County airports, including the Patterson Airport. The policies are designed to ensure that future land uses in the surrounding area will be compatible with potential aircraft activity at the airport. Each airport is assigned condition areas that dictate allowed land uses according to airport proximity. The project site is located within Conditions Area 4 of the Patterson Airport.



Source: Stanislaus County NAIP, 2009. FMMP, 2006. Stanislaus County and Turnstone Consulting.

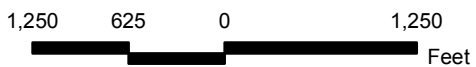


Exhibit 3.9-3 Patterson Airport Land Use Compatibility Zones

Stanislaus County Congestion Management Plan

The Stanislaus Council of Governments adopted the 2009 Congestion Management Process for the Stanislaus County Region (CMP) in January 2010, which addresses regional transportation planning requirements set forth by the federal and state governments. The CMP establishes objectives for reducing traffic congestion and designates a network of transportation facilities that are subject to prescribed performance standards. Within the Patterson area, I-5, SR-33, and Ward Avenue are designated CMP facilities. The CMP establishes a minimum performance standard of LOS E; however, both the City of Patterson's minimum performance standard (LOS C) and Caltrans's minimum performance standard (the transition between LOS C and D) supersede the CMP standard because they require a higher minimum LOS to be maintained. Note that consistency with the CMP is discussed in Section 3.12, Transportation.

Stanislaus Local Agency Formation Commission

Stanislaus LAFCO reviews proposals for the formation of new local governmental agencies and for changes in the organization of existing agencies with Stanislaus County. Stanislaus LAFCO regulates, through approval or denial, boundary changes proposed by other public agencies or individuals. Boundary changes are assessed against the criteria set forth in California Government Code Section 56668, which establishes factors LAFCO agencies must use in reviewing annexation proposals.

3.9.4 - Methodology

Michael Brandman Associates (MBA) evaluated the potential for land use impacts through site reconnaissance and review of applicable land use policy documents. MBA personnel performed site reconnaissance on the project site and surrounding land uses in July 2011. Photographs were taken of the project site and surrounding land uses to document existing conditions. MBA reviewed the City of Patterson General Plan, the Patterson Municipal Code, and the Stanislaus County Airport Land Use Commission Plan to identify applicable policies and provisions that pertain to the proposed project.

3.9.5 - Thresholds of Significance

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

- a) Physically divide an established community? (Refer to Section 7, Effects Found Not To Be Significant.)
- b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

- c) Conflict with any applicable habitat conservation plan or natural communities conservation plan? (Refer to Section 7, Effects Found Not To Be Significant.)

3.9.6 - Project Impacts and Mitigation Measures

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

General Plan Consistency

Impact LU-1:	The proposed project would be consistent with applicable provisions of the City of Patterson General Plan.

Impact Analysis

This impact addresses the potential for the proposed project to conflict with the City of Patterson General Plan.

General Plan Land Use Designation Consistency Analysis

The proposed project involves annexing the entire project site into the Patterson city limits. Following annexation, the City of Patterson General Plan would be the legally binding General Plan for the project site. Therefore, this analysis will evaluate the proposed project's consistency with the City of Patterson's General Plan.

The City of Patterson General Plan designates the project site "Light Industrial" and "General Commercial."

The portion of the project site designated "Light Industrial" coincides with all portions of the Arambel Business Park and KDN Retail Center/Business Park contemplated for business park or light industrial use. The proposed Master Development Plan identifies permitted uses within the Business Park and Light Industrial portions of the project as consisting of call centers, electronic repair and assembly, research and development, manufacturing, packaging, software development, warehouse, and wholesale distribution. All of these end uses are considered acceptable land use activities within the "Light Industrial" designation.

The portion of the project site designated "General Commercial" coincides with the portion of the KDN Retail Center/Business Park contemplated for general commercial use. The proposed Master Development Plan identifies permitted uses within the General Commercial portion of the project as consisting of apparel shops, appliance stores, banks and other financial institutions, department stores, drug stores, fast food restaurants, hotels and motels, markets (food), retail stores, sporting goods stores, and similar uses. Conditional uses include automobile sales, automobile service stations, bars and cocktail lounges, equipment rental, liquor stores, professional and administrative offices, and other similar uses. All of these end uses are considered acceptable land use activities within the "General Commercial" designation.

General Plan Amendment

The project site is currently located outside the City of Patterson’s Sphere of Influence. As part of the project’s discretionary approvals, a General Plan Amendment would be processed to expand the City’s Sphere of Influence to encompass the 1,119-gross-acre project site to be co-terminus with the proposed annexation request. This General Plan Amendment is expected to occur concurrently with the annexation/pre-zoning approvals. Note that Stanislaus LAFCO would also be required to approve the Sphere of Influence expansion request.

This General Plan Amendment would ensure that the City of Patterson’s jurisdictional boundaries are in conformance with state requirements. Furthermore, because the General Plan contemplates annexation of the entire project site at some future, undetermined date, adjusting the Sphere of Influence to be co-terminus with expanded city limits would not be in conflict with any aspect of the General Plan. Impacts would be less than significant.

General Plan Goals and Policies Consistency Analysis

Table 3.9-2 summarizes the proposed project’s consistency with all applicable goals and policies of the General Plan. As shown in the table, the proposed project would be consistent with all applicable goals and policies of the General Plan. Impacts would be less than significant.

Table 3.9-2: General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
Land Use	Goal LU-1	To provide for orderly, well-planned, and balanced growth consistent with the limits imposed by the city’s infrastructure and environmental constraints.	Consistent: The proposed project consists of the development of approximately 13.47 million square feet of business park, general commercial, and light industrial and associated infrastructure on approximately 880 net acres. The proposed project would represent the westerly expansion of existing fully entitled and partially developed West Patterson Business Park. A Master Development Plan would guide the buildout of the site over a period of 20 years. Therefore, it would be considered orderly, well-planned and balanced growth.
	Policy LU-1.6	Small town character. The City shall seek to preserve Patterson’s traditional small-town qualities and agricultural heritage, while increasing its residential and employment base.	Consistent: The proposed project is located at the western edge of Patterson, adjacent to I-5. This location is away from the historic downtown area and, thus, would not conflict with preserving Patterson’s traditional small-town qualities.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy LU-1.6		Although the project site currently supports agricultural uses, the General Plan contemplates the eventual conversion of this site to urban use. As such, it would not be in conflict with the General Plan's objectives of protecting agricultural heritage. Furthermore, the project would employ more than 10,093 full-time workers, most of whom are expected to be local residents, and thus would further the policy of increasing the local employment base.
	Policy LU-1.7	Preferences for the timing of urban development. In general, the preferred timing of urban development in accordance with the General Plan is as follows: - First Priority—Vacant or underutilized areas within the current City limits; - Second Priority—Vacant or underutilized areas within the City's current adopted sphere of influence; - Third priority—Vacant or underutilized areas within the General Plan area;	Consistent: The project site is outside the current city limits and Sphere of Influence and, therefore, would be considered "Third Priority." The neighboring West Patterson Business Park has existing capacity to partially accommodate the level of development contemplated by the proposed project (i.e., the light industrial and business park uses) and thus would be considered "First Priority"; however, it could not accommodate the proposed project's general commercial uses because of existing zoning restrictions. Regardless, the Patterson City Council will have the ability to determine whether the proposed project is consistent with the criteria for timing of urban development set forth in this policy.
	Policy LU-1.8	Managing the pace of development. The City shall link the rate of growth in Patterson to the provision of adequate services and infrastructure, including schools. The City shall, through specific plans and/or planned development plans for major projects, ensure that urban development proceeds in an orderly fashion and in pace with	Consistent: The proposed project includes a planned development that would ensure development proceeds in an orderly fashion and in pace with economic conditions. The project includes the development of urban roadways and utility infrastructure. Furthermore, this EIR ensures that adequate services and infrastructure would be available to serve the

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		the expansion of public facilities and services.	proposed project. (Refer to Section 3.12, Public Services and Utilities for further discussion.) As such, the proposed project would be served with adequate facilities and services, and therefore, would constitute orderly growth.
	Policy LU-1.9	Managing the relationship between jobs and housing. The City shall monitor residential and non-residential development and encourage adjustments as necessary in land use designations and the rate of project approvals to promote a reasonable citywide balance between new employment-generating development and housing development and to minimize traffic impacts.	Consistent: The project would create more than employ 10,093 full-time workers at buildout, which would occur over a period of 20 years. During this time period, housing projects would likely be approved within the City of Patterson, thereby creating a balance of employment-generating development and housing development. Traffic impacts resulting from the proposed project have been considered in this EIR. Refer to Section 3.13, Transportation, for further discussion.
	Policy LU-1.10	Fiscal impact of new development. The City shall use a fiscal impact model to inform decisions relating to new major development projects as defined by Municipal Code Section 18.08.020 and other new development as determined by the City Council. The purpose of a fiscal impact analysis is such and to ensure that the designation of areas for urban development and the approval of development projects do not hinder efforts to maintain a positive fiscal balance for the City.	Consistent: A fiscal impact analysis is being prepared for the proposed project by Goodwin Consulting Group in accordance with the requirements of Municipal Code Section 18.08.020.
	Policy LU-1.11	Protect the downtown. The City shall promote growth that complements, and does not adversely compete with, the downtown.	Consistent: The proposed project is located on the west side of Patterson, more than 1.5 miles from downtown. The proposed project's general commercial uses would be primarily highway-oriented to serve travelers on the I-5 corridor (e.g., service stations, lodging establishments, quick-serve restaurants, regional retail, etc.). Such uses would have limited potential to compete with

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
			downtown businesses and, therefore, further the policy of protecting the downtown area.
	Policy LU-1.12	Status of land prior to urban development. Land within the General Plan Area shall ultimately be developed to urban standards described in Part I – Land Use and Development Standards. Pending connection to City services, such land shall remain in agricultural, open space, or other low intensity uses.	Consistent: The proposed project would be built in phases over a 20-year period. The proposed project's Master Development Plan contemplates leaving portions of the project site in agricultural production until economic conditions determine that transition to urban uses is warranted. This would be similar to what has occurred in the West Patterson Business Park.
	Policy LU-1.15	Provision of public services. Consistent with the policies and implementation measures of this General Plan, the City shall consider the adequacy of public services prior to approving new development.	Consistent: This Draft EIR considers the adequacy of public services to serve the proposed project consistent with the policies and implementation measures of the General Plan. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal LU-3	To designate adequate land and provide support for the development of commercial uses providing goods and services to Patterson residents and to become the commercial service hub for western Stanislaus County.	Consistent: The proposed project consists of the development of approximately 13.47 million square feet of business park, general commercial, and light industrial and associated infrastructure on approximately 880 net acres. The project would serve both local residents and travelers on the I-5 corridor, thereby contributing to the establishment of Patterson as the commercial service hub for western Stanislaus County.
	Policy LU-3.1	Promotion of commercial sector. The City shall promote, and assist with the maintenance and expansion of, Patterson's commercial sector to meet the needs of Patterson residents, employees, and visitors. The City shall continue to gather market information to inform decisions regarding efforts to promote local businesses and attract new businesses.	Consistent: The proposed project consists of the development of approximately 13.47 million square feet of business park, general commercial, and light industrial that would be anticipated to employ 10,093 full-time workers at buildout. As such, the proposed project would be well positioned to meet the needs of local residents, employees, and visitors, and attract new business to the Patterson area.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy LU-3.2	Retail development. The City shall promote the establishment, maintenance, and expansion of businesses in Patterson that generate high retail sales taxes as important contributors to the local economy.	Consistent: The proposed project includes approximately 13.47 million square feet of business park, general commercial, and light industrial uses that would generate sales tax revenue for the City of Patterson.
	Policy LU-3.3	Regional centers. The City shall encourage regional shopping malls/centers at sites capable of support by a full range of transportation options.	Consistent: The proposed project site is located near the I-5/ Sperry Avenue interchange and would include the construction new roadways for internal circulation. As described in the Master Development Plan, pedestrian and vehicular access would be provided throughout the project; therefore, a full range of transportation options would be incorporated.
	Goal LU-5	To designate sufficient land to accommodate land uses serving the traveling public.	Consistent: The proposed project's 123 net acres of general commercial uses would be primarily highway-oriented to serve travelers on the I-5 corridor (e.g., service stations, lodging establishments, quick-serve restaurants, regional retail). This is consistent with the goal of designating sufficient land to accommodate land uses serving the traveling public.
	Policy LU-5.1	Highway Commercial development. The City shall support the development of highway-serving commercial area near the Sperry Avenue/Interstate 5 interchange and near a future interchange in the vicinity of Zacharias Road.	Consistent: The proposed project includes approximately 1.4 million square feet of general commercial uses that would be primarily highway-oriented near the I-5/ Sperry Avenue interchange and the future I-5/Zacharias Road (South County Expressway interchange).
	Goal LU-7	To designate adequate land and provide support for light and heavy industrial uses that create jobs and enhance the economy of Patterson.	Consistent: The proposed project includes 11 million square feet of light industrial uses on 653 net acres. All of this acreage is contemplated for Light Industrial use by the General Plan.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy LU.7.1	West Patterson Business Park. The City shall promote and assist the maintenance and expansion of Patterson's industrial sector by implementing the West Patterson Business Park Master Development Plan.	Consistent: The proposed project would represent the westerly expansion of the existing fully entitled and partially developed West Patterson Business Park, which is consistent with the policy of promoting and assisting the expansion of Patterson's industrial sector.
	Policy LU-7.2	Location of industrial development. New industrial development shall be located along arterials with easy freeway or rail access and shall be served by full City services.	Consistent: The proposed project includes 11 million square feet of light industrial uses on 653 net acres. The proposed project is immediately adjacent to Rogers Road and is within 1 mile of the I-5/Sperry Avenue interchange. Additionally, the project is adjacent to Zacharias Road, which is contemplated to be upgraded to an expressway that would have an interchange with I-5.
	Policy LU-7.5	Clean industries. The City shall promote the development of clean industries that do not pose health risks associated with water and air pollution or potential leaks or spills.	Consistent: The proposed project's Master Development Plan contemplates a wide range of end uses for the proposed project, including call centers, research and development, manufacturing, software development, warehouse, wholesale distribution, apparel shops, banks and other financial institutions, department stores, drug stores, fast food restaurants, hotels and motels, and retail stores. These industries typically do not use large quantities of hazardous materials, which limits the potential for air and water pollution and leaks or spills. Likewise, the proposed Master Development Plan prohibits industries such as chemical/ explosives manufacturing, refining, mining, and other uses that are typically associated with the use of large quantities of hazardous materials.
	Goal LU-8	To designate adequate land for development of public and quasi-public uses to support existing and new residential, commercial, and industrial land uses.	Consistent: The proposed project includes water, sewer, and storm drainage infrastructure, and would dedicate land to the City of Patterson for a new fire station

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
			site. This is consistent with the goal of designating adequate land for development of public and quasi-public uses.
	Policy LU-8.3	Public safety facilities. The City shall pursue the development of additional public safety facilities as needed to serve the growing population.	Consistent: The proposed project would dedicate land to the City of Patterson for a new fire station site and would provide development fees to the City of Patterson for capital improvements to fire and law enforcement facilities.
	Goal LU-9	To ensure consistency with the requirements of applicable airport land use plans.	Consistent: The project site is located within Conditions Area 4 of the Patterson Airport, and the project is consistent with all applicable recommendations of the Stanislaus County Airport Land Use Commission Plan. Refer to Impact LU-3 in this section.
	Policy LU-9.1	Airport land use plans. The City shall continue to ensure that amendments to the General Plan are consistent with applicable adopted airport land use plans.	Consistent: The project site is located within Conditions Area 4 of the Patterson Airport, and the project is consistent with all applicable recommendations of the Stanislaus County Airport Land Use Commission Plan. Refer to Impact LU-3 in this section.
	Policy LU-9.2	Development within airport land use plan areas. The City shall ensure consistency with the development restrictions associated with the applicable Airport Land Use Plan for the Crows Landing Airfield by employing strategies that may include (but are not limited to), the following: a. Requiring the clustering of residential lots beyond airport land use restriction areas; b. Applying zoning regulations to establish a minimum residential parcel size consistent with the applicable land use restrictions; c. Requiring land within airport restricted areas to be designated as open space or parks; d. Other strategies consistent with the purpose and intent of the Airport Land Use Plan.	Consistent: This EIR addresses the project's consistency with the Stanislaus County Airport Land Use Commission Plan. Refer to Impact LU-3 in this section. The project is within 5 miles of the Crows Landing Naval Air Facility, but outside the airport planning area for this facility and, therefore, would not be adversely affected by any future development activities at that site.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
Community Design	Goal CD-1	To promote the development of a coherent and distinctive physical form and structure that reflects Patterson’s small-town qualities and agricultural heritage.	Consistent: The proposed project would employ contemporary architecture in an area of Patterson characterized by newer development. The project would also be located more than 1.5 miles from the downtown area and, therefore, avoid creating visual compatibility issues with the historic buildings in this area. As such, these characteristics are consistent with the objective of promoting an appearance that would be complementary to surrounding land uses, thereby promoting the development of a coherent and distinctive physical form and structure that reflects Patterson’s small-town qualities and agricultural heritage.
	Policy CD-1.2	Enhance distinctiveness. The City shall endeavor to maintain and enhance the distinctiveness and integrity of neighborhoods and districts in Patterson.	Consistent: The proposed project would represent the westerly expansion of the West Patterson Business Park and would employ complementary contemporary architecture thereby maintaining and enhancing the visual characteristics of the surrounding commercial uses.
	Policy CD-1.7	Maintain a distinct urban edge. The City shall seek to maintain a distinct agricultural definition to the urban edge of the city as a means of emphasizing Patterson’s small-town qualities and agricultural heritage.	Consistent: The proposed project boundaries are defined by “hard edges”—I-5, Zacharias Road, Rogers Road, and Villa del Lago. This allows for buffering of agricultural uses on the opposite sides of these roadways and land uses, thereby furthering the objective of maintaining a distinct agricultural definition to the urban edge of the City and avoiding “leapfrog” patterns of development.
	Policy CD-1.8	Green building practices. The City supports the use of green building practices in the planning, design, construction, management, renovation, operations, and demolition of all private buildings and projects, including:	Consistent: The proposed project would be subject to the requirements contained in the latest adopted edition of the California Green Building Standards Code (CalGreen), which is widely considered a preeminent

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		• Land planning and design techniques that preserve the natural environment and minimize disturbance of the land. • Site development to reduce erosion, minimize paved surfaces and runoff and protect vegetation, especially trees. • Water conservation indoors and outdoors. • Energy efficiency in heating/cooling systems, appliances, lighting and the building envelope. • Selection of materials based on recyclability, durability and the amount of energy used to create the material. • Waste reduction, reuse and recycling during construction and throughout the life of the project. • Other new aspects of green design and construction included in LEED™ or other certification programs. • Control nighttime lighting to lower energy use, reduce glare, and prevent illumination of the night sky.	standard for green building practices. CalGreen establishes standards for water efficiency, energy efficiency, lighting, and other items outlined in this policy and, therefore, project buildings would implement applicable green building practices.
	Goal CD-3	To preserve the existing community character and fabric and promote the development of neighborhoods and districts that emphasize pedestrian convenience.	Consistent: The proposed project would employ contemporary architecture in an area of Patterson characterized by newer development. The proposed project's appearance would be complementary to surrounding land uses, thereby preserving the existing community character. The proposed project would install pedestrian facilities along roadways, which would be linked to building entrances. This would be consistent with the objective of emphasizing pedestrian convenience.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy CD-3.3	Pedestrian amenities for commercial areas. New commercial and office development shall promote pedestrian convenience, especially in the downtown.	Consistent: The proposed project would install pedestrian facilities along roadways, which would be linked to building entrances. Pedestrian facilities would include landscaping, benches, trash receptacles, and other similar amenities. This would be consistent with the objective of promoting pedestrian convenience.
	Policy CD-3.4	Site design. The City shall encourage site design that increases the convenience, safety and comfort of people using transit, walking or cycling.	Consistent: The Master Development plan includes guidelines that encourage the orientation of buildings to respond to the pedestrian use, thereby increasing the convenience, safety and comfort of people using transit, walking or cycling. Additionally, the proposed project would include the installation of bicycle and pedestrian facilities on new roadways within the project boundaries.
	Goal CD-4	To maintain and enhance the quality of the Patterson's landscapes and streetscapes.	Consistent: The Master Development plan includes significant landscaping as a desirable design element that should be incorporated into development throughout parking lots, adjacent to buildings, within setbacks and along streets. As such, the proposed project would maintain and enhance the quality of landscapes and streetscapes.
	Policy CD-4.1	Street trees. The City shall endeavor to protect the urban forest created by mature trees in existing developed areas and in newly developing areas.	Consistent: The Master Development Plan includes guidelines indicating trees should be planted throughout project site and along streets in accordance with the City's Tree Regulations, thereby developing the urban forest.
	Policy CD-4.2	Extending the established pattern of landscaping. The City shall require that all new development incorporate the planting of trees and other vegetation that extend the vegetation pattern of older adjacent neighborhoods into new development.	Consistent: The Master Development Plan includes guidelines for the incorporation of landscaping throughout the project site, thereby extending the vegetation pattern of adjacent commercial development.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy CD-4.3	Boulevard planting. The City shall extend and reinforce major street tree/boulevard plantings to enhance the visual character of special and important streets within Patterson.	Consistent: The Master Development Plan includes guidelines indicating trees should be along streets in accordance with the City's Tree Regulations, thereby enhancing the visual character of streets within the project site.
Economic Development	Goal ED-1	To establish and maintain a supportive business climate and a healthy, sustainable economy.	Consistent: The proposed project consists of the development of approximately 13.47 million square feet of light industrial and general commercial uses that would support Patterson's business climate and a healthy, sustainable economy.
	Policy ED-1.3	Opportunity areas. The City shall continue to strategically market its business/industrial park opportunity areas including the West Patterson Business Park.	Consistent: The proposed project consists of the development of approximately 13.47 million square feet of business park, light industrial, and general commercial uses adjacent to the existing West Patterson Business Park, thereby providing additional business/industrial opportunities.
	Policy ED-1.5	Economic sustainability. The City shall work to attract and retain long-term, economically sustainable businesses.	Consistent: The Master Development Plan contemplates a wide range of end uses for the proposed project, including call centers, research and development, manufacturing, software development, warehouse, wholesale distribution, apparel shops, banks and other financial institutions, department stores, drug stores, fast food restaurants, hotels and motels, and retail stores. As such, the proposed project's capability to support a variety of industries is consistent with the policy of attracting and retaining long-term, economically sustainable businesses.
	Policy ED-1.6	Evaluate fiscal impacts. The City shall evaluate the fiscal impacts of new development to encourage a pattern of growth that will allow the City to provide high standards of public services, facilities, and infrastructure.	Consistent: A fiscal impact analysis is being prepared for the proposed project by Goodwin Consulting Group.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy ED-2.4	Quality of life. The City shall work to improve the quality of life in Patterson to attract and retain skilled workers and their families.	Consistent: The proposed project would result in the creation of 10,093 full-time jobs and 13.47 million square feet of commercial and industrial services, thereby contributing to an improvement in the quality of life in Patterson.
	Goal ED-3	To promote a diverse and balanced mix of employment and housing opportunities.	Consistent: The proposed project is capable of supporting a wide range of industries and, thus, furthers the objective of promoting a diverse and balanced mixed of employment opportunities.
	Policy ED-3.1	Jobs-to-housing ratio. The City shall maintain an adequate retail, business, and industrial land supply to meet a jobs-to-housing ratio of at least 1.0.	Consistent: The proposed project would result in the annexation of 1,119 gross acres for commercial and industrial development that would result in 10,093 full-time jobs, thereby contributing to the adequate land supply to meet a jobs-to-housing ratio of at least 1.0.
Transportation and Circulation	Goal T-1	To create and maintain a roadway network that will ensure the safe and efficient movement of people and goods throughout the city.	Consistent: The proposed project would construct new and improve existing roadway facilities, which would further the goal of providing for the safe and efficient movement of people and goods.
	Policy T.1-1	Street design. Street design and access standards shall provide for safe and efficient movement of goods and people. Restrictive traffic control measures (such as channelization, street closures, and prohibition of some traffic movements) shall be used where appropriate to promote traffic safety and efficient traffic operation.	Consistent: The new and improved roadways would adhere to the City's street design standards. As shown in Exhibit 2-5, all new roadways within the project site provide for direct and efficient access. In addition, the proposed project would install appropriate traffic control measures where appropriate in order to promote traffic safety and efficient traffic operations. Refer to Section 3.13, Transportation, for further discussion.
	Policy T.1-2	Level of service standard. The City shall endeavor to maintain a minimum Level of Service "D," as defined by the 2000 Highway Capacity Manual or subsequent revisions, on all streets and	Consistent: TJKM Transportation Consultants prepared a traffic impact analysis for the proposed project. The study identified feasible traffic improvements that are reflected as mitigation

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		intersections within the city. To identify the potential impacts of new development on traffic service levels, the City shall require the preparation of traffic impact analyses at the sole expense of the developer for developments determined to be large enough to have potentially significant traffic impacts. This standard does not apply to freeways which are governed by the standards established by Caltrans.	measures in the Draft EIR to achieve LOS D or better. Refer to Section 3.13, Transportation, for further discussion.
	Policy T.1-3	Hierarchy of streets. The City shall implement a hierarchical street system in which each street serves a specific, primary function and is sensitive to the context of the land uses served. The hierarchy of streets shall be based on the existing one square mile backbone grid system of streets along section lines and the traditional circulation pattern established in the City's downtown. Development of residential neighborhoods within the backbone grid may employ a more circuitous street pattern with cul-de-sacs, traffic circles, roundabouts and other traffic calming features to help reduce traffic speeds.	Consistent: The proposed project would include the construction of a hierarchy of new and improved roadways. These roadways have been designed specifically for the characteristics of the proposed project and would provide seamless connections to existing roadways such as Rogers Road and Keystone Pacific Parkway.
	Policy T-1.4	City standards for streets. Streets shall be dedicated, widened, extended, and constructed based on the roadway classifications/ definitions and street sections provided in the City's roadway improvement standards and Street Master Plan (see implementation measure T-2). Dedication and improvements of full rights-of-way shall not be required in existing developed areas where the City determines that such improvements are either infeasible or undesirable. Other deviations from these standards shall be permitted upon a determination by the City Engineer that safe and adequate public access and circulation are preserved by such deviations.	Consistent: The proposed project's roadways would include streets identified as New Collector Roadways on the City of Patterson General Plan's Circulation Plan. The roadways would be constructed according to the classifications/definitions and street sections provided in the City's roadway improvement standards.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy T-1.6	South County Corridor. The City shall promote efforts of Stanislaus County, StanCOG and other stakeholders in the development of the South County Corridor to connect W. Main Avenue to Interstate 5. The City's preference for the alignment of the South County Corridor is shown on the Circulation Plan (Figure II-4 of Chapter II. Land Use/Circulation Diagrams And Standards). However, the final alignment should be decided through a cooperative effort among stakeholders, and informed by a comprehensive feasibility study that assesses at least the following: • The appropriate right-of-way width and location; • Environmental and regulatory constraints, especially as they relate to agricultural and biological resources; • The need for, and economic/environmental feasibility of, constructing a second bridge over the San Joaquin River; • An estimate of relevant costs; and • An analysis of alternatives;	Consistent: The proposed project has been designed to allow for the extension of Zacharias Road, also contemplated as the alignment of the planned South County Expressway, along a portion of its northern boundary, thereby supporting the City's preferred alignment and efforts to connect W. Main Avenue to I-5.
	Policy T-1.8	Streets outside the downtown. The primary purpose of streets outside the downtown is the movement of vehicles and goods; parking shall be a secondary and subordinate use only. If travel demands dictate, on-street parking may be removed on streets that serve primarily non-residential development to increase traffic-carrying capabilities.	Consistent: The Master Development Plan requires each use to provide sufficient off-street parking in accordance with Zoning Ordinance requirements. On-street parking would be prohibited along major roadways such as Rogers Road.
	Policy T-1.9	Truck access to avoid residential neighborhoods. Industrial and commercial development shall be planned so that truck access through residential areas is avoided.	Consistent: The proposed project would be within 1 mile of the I-5/ Sperry Avenue interchange and the future I-5/Zacharias Road (South County Expressway) interchange. As such, project-related truck traffic would avoid traveling through residential areas to reach I-5.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy T-1.10	Funding of traffic improvements. The City shall ensure through a combination of traffic impact fees and other funding mechanisms that new development fully mitigates its impact on traffic facilities by paying its share of the costs of circulation improvements. New development shall pay a proportional share of costs of required improvements necessitated by the new development.	Consistent: The proposed project would mitigate its impact on traffic facilities by installing necessary improvements or paying its share of the costs of necessary improvements as determined in the traffic impact analysis prepared by TJKM. Mitigation based on this traffic study has been included in this Draft EIR. Refer to Section 3.13, Transportation, for further discussion.
	Policy T-1.11	Private streets discouraged. The City shall discourage the development of private streets in new residential projects. Where private streets are allowed, they shall be constructed to City street standards.	Consistent: The proposed project would not include the development of private streets.
	Policy T-1.13	New interchange. The City shall investigate the construction of a new interchange at Interstate 5 north of Sperry Avenue near Zacharias Road.	Consistent: The proposed project has been designed to allow for the extension of Zacharias Road, also contemplated as the alignment of the planned South County Expressway, along a portion of its northern boundary. Additionally, the traffic analysis considered the need for the future interchange with I-5 and identified the timing at which it would be necessary. This is consistent with the policy of investigating the construction of a new interchange at I-5 north of Sperry Avenue in the vicinity of Zacharias Road.
	Goal T-4	To consider air quality and noise impacts along with traffic flow efficiency when making decisions about improvements to existing roadways or the construction of new roadways.	Consistent: This EIR has considered air quality and noise impacts along with traffic flow efficiency and mitigation has been incorporated where appropriate. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions; Section 3.10, Noise; and Section 3.13, Transportation for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy T-4.1	Protection of neighborhoods from traffic impacts. To the extent feasible, the City shall provide for separation of residential and other noise-sensitive land uses from major roadways to reduce noise and air pollution impacts from traffic.	Consistent: The proposed project is not located adjacent to or near residential neighborhoods and would not require or encourage traffic to utilize streets in residential areas or near sensitive land uses.
	Goal T-5	To promote intergovernmental communication and cooperation concerning transportation-related issues.	Consistent: Relevant state and local agencies that oversee transportation-related issues have been provided notice of the availability of this EIR. The comments of those agencies will be addressed in the Final EIR. This is consistent with promoting communication and cooperation among agencies that oversee transportation-related issues.
	Policy T-5.2	Communication among agencies. The City shall continue to develop formal and informal lines of communication among adjacent jurisdictions to ensure cooperation in the development of transportation systems that cross jurisdictional boundaries.	Consistent: Relevant state and local agencies have been provided notice of the availability of this EIR. The comments of those agencies will be addressed in the Final EIR. This is consistent with promoting communication and cooperation among agencies that oversee transportation-related issues.
	Goal 6	To ensure the adequate provision of both on- and off-street parking.	Consistent: The Master Development Plan requires each use to provide sufficient off-street parking in accordance with Zoning Ordinance requirements.
	Policy T-6.2	Off-street parking required. The City shall require provision of adequate off-street parking in conjunction with all new developments. Parking shall be located convenient to new development and shall be easily accessible from the street system. The adequacy and appropriateness of parking requirements in the Zoning Ordinance shall be periodically reevaluated.	Consistent: The Master Development Plan requires each use to provide sufficient off-street parking in accordance with Zoning Ordinance requirements.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy T-6.6	Truck parking. On-street truck parking shall be prohibited where such parking restricts adequate sight distances or otherwise poses a potentially hazardous situation.	Consistent: On-street truck parking shall be prohibited as necessary to ensure adequate sight distances and eliminate otherwise potentially hazardous situations.
	Goal T-7	To promote pedestrian, bicycle and rail travel as alternatives to automobile use.	Consistent: The Master Development Plan provides guidelines to alternative transportation modes such as clearly distinguishing walkways and pedestrian access, orientating buildings to respond to pedestrian use, and implementing pedestrian and bicycle linkages between parcels and buildings. As such, pedestrian and bicycle transit would be promoted.
	Policy T-7.1	Safe pedestrian and bike pathways. The City shall create and maintain a safe and convenient system of pedestrian and bicycle pathways that encourages walking and bicycling as an alternative to driving. New development shall be required to pay its fair share of the costs for development of this pathway system.	Consistent: The Master Development Plan provides guidelines for alternative transportation modes such as clearly distinguishing walkways and pedestrian access, orientating buildings to respond to pedestrian use, and implementing pedestrian linkages between parcels and buildings. Such amenities would also serve bicyclists. As such, pedestrian and bicycle transit would be promoted.
	Policy T-7.2	Pedestrian access. All new development shall be reviewed to ensure safe pedestrian access is provided from the street, within parking areas and between new development and surrounding neighborhoods.	Consistent: The Master Development Plan provides guidelines for the appropriate provision of safe pedestrian access, including connection to and from streets, within parking areas, and between adjacent buildings.
	Policy T-7.6	Bike storage. The City shall require the inclusion of bicycle parking facilities at all new major public facilities and commercial and employment sites and shall encourage large employers to provide showers for employees.	Consistent: The proposed project's general commercial uses would be required to provide bicycle storage facilities. Certain project uses may provide onsite locker room/shower facilities for employees.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy T-7.8	Bike safety. Bicycle safety shall be considered when implementing improvements for automobile traffic operations.	Consistent: The proposed project's roadways would be constructed according to standards set by the City of Patterson, including those related to bicycle safety.
	Goal PS-1	To maintain an adequate level of service in the City's water system to meet the needs of existing and future development.	Consistent: The proposed project would connect to the City's water system. A Water Supply Assessment was completed and concluded that adequate water supplies exist to serve the project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-1.1	Water Supply. The City shall continue to use groundwater as a source of domestic water for the city. The City shall also pursue, as expeditiously as possible, a water supply program consisting of the development of multiple sources of water, the maximum use of recycled water, water conservation and groundwater management to accommodate projected water demand and provide for water supply security.	Consistent: The proposed project would use groundwater as provided by the City of Patterson for domestic purposes. Non-potable groundwater would be used for irrigation purposes. This Draft EIR identifies water conservation measures and practices that would be implemented by the proposed project. Refer to Section 3.12, Public Services and Utilities for further direction.
	Policy PS-1.2	City-owned systems. The City shall continue to expand water treatment, distribution, and storage facility systems for potable and non-potable systems as necessary to accommodate the needs of existing and planned development.	Consistent: As a part of the proposed project, a network of potable and non-potable water distribution and storage infrastructure would be constructed and connected to the City's existing infrastructure.
	Policy PS-1.3	Supply for new development. The City shall not approve any new development without the demonstrated assurance of an adequate water supply to support such development that meets City criteria for both potable and non-potable demands, and a City-approved funding mechanism to pay for necessary improvements. Such assurance shall be provided in a form and manner determined by the City, and may include, but is not limited to, the following:	Consistent: A Water Supply Assessment has been completed for the proposed project and concluded that adequate water supplies exist to serve the project. The Water Supply Assessment concluded that local groundwater supplies would provide adequate potable and non-potable water for the proposed project. The City would provide potable water and the property owner would use private onsite wells for non-

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		a. A contract between the property owner(s) and a water purveyor guaranteeing the long-term delivery of a suitable quantity of water to serve the intended use of the property consistent with the General Plan; b. A contract between a water purveyor and the City guaranteeing the long-term delivery of a suitable quantity of water to serve the intended use of the property consistent with the General Plan; c. Such other mechanism suitable to the City.	potable water. The proposed project would participate in a Community Facilities District or similar financing mechanism to pay for necessary water infrastructure. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-1.4	Agency coordination. The City shall coordinate, to the extent feasible, with other agencies involved in water resource development in the region	Consistent: Relevant state and local agencies have been provided notice of the availability of this EIR. The comments of those agencies will be addressed in the Final EIR. This is consistent with promoting communication and cooperation among agencies that oversee water-related issues.
	Policy PS-1.5	Water conservation. To minimize the need for the development of new water sources and facilities and sewer treatment needs, the City shall promote water conservation both in City operations and in private development.	Consistent: This Draft EIR identifies water conservation measures and practices that would be implemented by the proposed project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-1.6	Reclaimed water. Where available, the City shall require the use of reclaimed water by industrial, commercial, recreational, agricultural and roadway landscaping uses.	Consistent: An onsite wastewater treatment plant may be used for one or more phases of the project. Treated effluent generated by the onsite plant would be used for irrigation purposes.
	Policy PS-1.8	Adequate fire flows. The City shall ensure the provision of water supply, storage, and adequately sized pipelines to provide fire flows to meet recommendations of the City Fire Chief and City Engineer (see Policy HS-3.2).	Consistent: The proposed project would be designed in accordance with the latest building code standards for fire flow. Refer to Section 3.12, Public Services and Utilities for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy PS-1.9	Improvement costs. The City shall, through a combination of water development fees and other funding mechanisms, ensure that new development pays its share of the costs of water system improvements.	Consistent: The proposed project would provide water development fees and develop onsite water systems improvements as necessary to adequately serve the project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-1.10	New development conservation measures. The City shall require all new development to use best available technologies for water conservation including, but not limited to, water-conserving toilets, showerheads, faucets, and irrigation systems.	Consistent: This Draft EIR identifies water conservation measures and practices that would be implemented by the proposed project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal PS-2	To maintain an adequate level of service in the City's wastewater collection and disposal system to meet the needs of existing and future development.	Consistent: A Sanitary Sewer Analysis concluded that adequate transmission capacity exists to handle effluent from the project site. However, the proposed project would contribute to the need for additional wastewater treatment capacity as phases are built out. The applicant would contribute "fair share" fees to the City of Patterson to fund the eventual expansion, thereby ensuring adequate levels of wastewater collection and disposal are maintained. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-2.2-	Provision of sewer service. The City shall ensure the provision of adequate sewer service to all new development in the city and support the extension of sewer service to existing developed areas where this service is lacking.	Consistent: The City of Patterson would provide sewer collection and wastewater treatment service to the proposed project. A Sanitary Sewer Analysis concluded that adequate transmission capacity exists to handle effluent from the project site. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-2.3	Treatment capacity. The City shall expand and develop new wastewater treatment and disposal capacity as needed to accommodate the needs of existing and planned development.	Consistent: The proposed project would contribute to the need for additional wastewater treatment capacity as phases are built out. The applicant would contribute "fair share" fees to the City of

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
			Patterson to fund the eventual expansion, thereby ensuring adequate levels of wastewater collection and disposal are maintained for existing and planned development. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-2.4	Fair share costs. The City shall, through a combination of development impact fees and other funding mechanisms, ensure that new development pays its fair share of the costs of sewer system improvements.	Consistent: The applicant would contribute “fair share” fees to the City of Patterson to fund the eventual expansion of the wastewater treatment facility. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-2.7	Wastewater treatment standards. The City shall ensure that all discharge standards established by the Regional Water Quality Control Board are met in the operation of the wastewater treatment facility. To meet future water supplies the City will explore options to treat existing wastewater flows to California Water Code Title 22 (unrestricted reuse) standards.	Consistent: The applicant would contribute “fair share” fees to the City of Patterson to fund the eventual expansion of the wastewater treatment facility, thereby ensuring discharge standards can be met. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-2.8	Wastewater treatment alternatives. The City may consider alternatives for the collection, treatment and disposal of wastewater for areas on the west side of the City as a means of reducing wastewater collection, treatment and disposal costs. Such alternatives may include, but are not limited to, the use of independent wastewater treatment and disposal systems that satisfy the requirements of the Regional Water Quality Control Board and the City.	Consistent: An onsite wastewater treatment plan may be used for one or more phases of the project, thereby reducing the City’s wastewater collection, treatment and disposal costs. The onsite wastewater treatment plant would satisfy the requirements of the Regional Water Quality Control Board and the City. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal PS-3	To maintain an adequate level of service in the City’s storm drainage system to accommodate runoff from existing and future development and to prevent property damage due to flooding.	Consistent: The proposed project would install onsite drainage infrastructure that would detain water onsite for groundwater recharge. A Storm Drainage Analysis completed for the

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
			proposed project concluded that the proposed infrastructure would have adequate capacity to handle project site storm drainage flows. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-3.2	Expansion of drainage systems. The City shall expand and develop storm drainage facilities to accommodate the needs of existing and planned development.	Consistent: The proposed project would install onsite drainage infrastructure that would detain water onsite for groundwater recharge. A Storm Drainage Analysis completed for the proposed project concluded that the proposed infrastructure would have adequate capacity to handle project site storm drainage flows. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-3.3	Drainage districts. The City shall form storm drainage districts as needed to ensure that storm drainage facilities are properly constructed, operated, and maintained.	Consistent: A Storm Drain Analysis has been prepared for the proposed project to ensure drainage facilities are properly sized and constructed. As necessary, one or more storm drainage districts would be formed to ensure that storm drainage facilities are properly constructed, operated, and maintained.
	Policy PS-3.4	Fair share costs. The City shall, through a combination of drainage improvement fees and other funding mechanisms, ensure that new development pays its fair share of the costs of drainage system improvements.	Consistent: The proposed project would pay fair-share fees, build new drainage facilities, and participate in a Community Facilities District or other financing mechanism, as applicable, to implement drainage system improvement.
	Policy PS-3.5	Pollutant requirements. Future drainage system discharges shall comply with applicable state and federal pollutant discharge requirements.	Consistent: Construction and operational pollution prevention measures would be implemented to ensure that runoff leaving the project site complies with all applicable pollutant discharge requirements. Refer to Section 3.8, Hydrology and Water Quality for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy PS-3.6	National Flood Insurance Program. The City shall continue to participate in the National Flood Insurance Program. To this end, the City shall ensure that its regulations are in full compliance with standards adopted by the Federal Emergency Management Agency.	Consistent: The proposed project would be constructed to fully comply with Federal Emergency Management Agency standards related to flooding and the National Flood Insurance Program as applicable for the project site's flood zone designation. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy PS-3.8	Finish floor elevation – non-residential development. Non-residential development shall be anchored and flood-proofed to prevent damage from the 100-year flood or, alternatively, elevated to at least 12 inches above the 100-year flood level.	Consistent: The proposed project is located outside a 100-year flood zone. Stormwater facilities would be constructed to ensure onsite and offsite flooding would not occur as a result of project implementation. A Storm Drainage Analysis has been completed to ensure stormwater facilities are adequately sized. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy PS-3.10	Storm drainage improvements required. Construction of storm drainage improvements shall be required, as appropriate, to prevent flooding during periods of heavy rainfall. Where feasible, storm drainage facilities should continue to be combined with park facilities.	Consistent: The proposed project's storm drainage would consist of underground piping and detention basins that would capture and detain runoff. Onsite stormwater basins would be sized for a 50-year, 24-hour storm event in accordance with the City of Patterson's standards, thereby preventing flooding during periods of heavy rainfall. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy PS-3.11	Conditions for grading. The City shall impose appropriate conditions on grading projects performed during the rainy season to ensure that silt is not conveyed to storm drainage systems.	Consistent: Mitigation is proposed as part of this EIR that would require the implementation of stormwater quality protection measures during construction and site grading. This mitigation measure would ensure that silt is not conveyed to storm drainage systems. Refer to Section 3.8, Hydrology and Water Quality for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy PS-3.12	Detention basins. The City shall ensure that stormwater detention basin designs provide safety for the public, are visually appealing and unobtrusive, incorporate wildlife habitat, and, where feasible, offer recreational opportunities.	Consistent: Detention basins would be landscaped and integrated as an amenity into the site and landscaping plan.
	Policy PS-3.13	Surface pollutant control. The City shall require new development to incorporate runoff control measures to minimize discharge of surface pollutants into drainage systems. Examples of potential programs include: • The use of “bioswales” and similar features (such as infiltration trenches, filter trips, and vegetated buffers) to trap contaminants; • Installation of grease/oil separators to keep these contaminants out of storm runoff; • Regular street sweeping programs to prevent the buildup of oil, grease, and other contaminants and keep them from being swept into creeks and rivers; • Minimizing pesticide use and promoting the use of natural pest controls; • Encouraging the installation of “gray water” systems. • Provisions in new development aimed at protecting native water courses, wetlands or other sensitive habitats from adverse water quality impacts associated with post-development storm water runoff (i.e., hydromodification plan).	Consistent: Mitigation is proposed as part of this EIR that would require the implementation of stormwater quality protection measures during construction and operation. This mitigation measure includes implementation of stormwater pollution prevention measures such as bioswales, grease/oil separators, and regular street sweeping. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy PS-3.14	Erosion control. The City shall require new development to incorporate erosion control measures to minimize sedimentation of streams and other natural drainage features.	Consistent: Mitigation is proposed as part of this EIR that would require the implementation of stormwater quality protection measures during construction and operation. The mitigation requires

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
			the implementation of an SWPPP and associated BMPs that would require erosion control measures and subsequent minimization of sedimentation.
	Policy PS-3.15	Groundwater recharge. Where feasible, storm drainage facilities shall be designed to assist with, and complement, the water supply program in regards to groundwater recharge.	Consistent: The proposed project includes the construction of nine basins from which groundwater recharge would occur.
	Goal PS-4	To provide for the efficient collection and disposal of solid waste while minimizing impacts to the physical and social environment.	Consistent: Mitigation is proposed as part of this EIR requiring the implementation of waste reduction measures, thereby minimizing impacts to the physical and social environment related to solid waste. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-4.1	Reduction goals. The City shall study and actively pursue methods of solid waste recycling and reuse, including source separation, with the goal of reducing its solid waste generation by 25 percent by the year 2015 and 50 percent by the year 2020.	Consistent: Mitigation is proposed as part of this EIR requiring the implementation of waste reduction measures including recycling and waste diversion activities, thereby assisting in the City's goals regarding the reduction of solid waste generation. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-4.4	Construction debris. The City shall require the separation and recycling of all recyclable or reusable materials from construction debris.	Consistent: Mitigation is proposed as part of this EIR requiring a qualified contractor to perform construction debris recycling for the proposed project with the objective of diverting a minimum of 50 percent of debris from the waste stream. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal PS-5	To ensure that an adequate level of police service is maintained as new development occurs.	Consistent: Patterson Police Services was consulted during the preparation of this EIR regarding impacts to police protection. Mitigation proposed in this EIR would ensure that an adequate level of police service is

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
			maintained. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-5.1	Police response time. The City shall, through adequate staffing and patrol arrangements, and through the establishment of police stations/patrol offices, endeavor to maintain the minimum feasible response times for police calls for all parts of the City. The goal for average response time for Priority 1 (emergency) calls shall be three minutes.	Consistent: Although this policy primarily applies to the City of Patterson's administration of law enforcement, the proposed project would contribute to maintaining these response times by providing development fees for police facilities and generating additional tax revenue. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-5.3	Ratio of police officers to population. The City shall endeavor to achieve and maintain a ratio of 1.5 police officers per 1,000 population.	Consistent: Patterson Police Services was consulted during the preparation of this EIR regarding impacts to police protection. Mitigation proposed in this EIR would ensure that an adequate level of police service is maintained. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-5.4	Agency cooperation. The City shall continue to work with other agencies to facilitate the most cost-effective provision of law enforcement and social services for Patterson residents.	Consistent: Relevant state and local agencies have been provided notice of the availability of this EIR. The comments of those agencies will be addressed in the Final EIR. This is consistent with promoting communication and cooperation among agencies that oversee law enforcement-related issues.
	Goal PS-6	To ensure that an adequate level of fire service is maintained as new development occurs.	Consistent: The Patterson Fire Department was consulted during the preparation of this EIR about project impacts on fire protection. The Fire Department's concerns have been fully address, which is consistent with the goal of providing adequate levels of fire service. Refer to Section 3.12, Public Services and Utilities for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy PS-6.1	Fire response time. The City shall endeavor to achieve and maintain an overall fire insurance (ISO) rating of 5 or better. The goal for average response time for Priority 1 (emergency) calls shall be five minutes for 95 percent of the calls.	Consistent: The project site is within 1 mile of Fire Station No. 2. Additionally, a new fire station is contemplated within the Arambel portion of the project site that would be funded by the proposed project's Community Facilities District or other financing mechanism. As such, the proposed project would be within proximity of both fire stations and, therefore, able to meet the emergency call response time standard. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-6.2	Location of stations. Fire stations shall be strategically located to ensure optimal response time. The existence of physical barriers such as railroad tracks shall be an important siting consideration.	Consistent: The project site is within 1 mile of Fire Station No. 2 and the planned fire station within the Arambel portion of the project site. No railroad tracks or other barriers are present between the project site and either station site. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy PS-6.3	Fire Code requirements. The City shall continue to apply the California Fire Code requirements for built-in fire suppression equipment in all new development.	Consistent: The proposed project would be constructed in compliance with Title 24 of the California Code of Regulations, which includes the California Fire Code and contains fire-safety-related building standards.
	Policy PS-6.4	Ratio of fire fighters to population. The City shall endeavor to achieve and maintain a ratio of 1.0 career fire fighters per 1,000 population.	Consistent: The proposed project would generate new sources of tax revenues that could be applied to increasing fire staffing. Note that such a decision is at the discretion of the Patterson City Council. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal PS-9	To promote efficiency, convenience, and harmony in the siting of public facilities.	Consistent: The proposed project would establish a Community Facilities District or other financing mechanism to fund and implement necessary public facilities, including fire stations

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
			and water, sewer, and storm drainage infrastructure. This would promote efficiency, convenience, and harmony in the development of public facilities.
	Policy PS-9.1	Land use compatibility. Public facilities—such as utility substations, water storage or treatment plants, pumping stations, and sewer treatment plants—shall be located, designed, and maintained so that noise, light, glare, or odors associated with these facilities will not adversely affect nearby land uses. Building and landscaping materials that make these facilities compatible with neighboring properties shall be used.	Consistent: The proposed project would include the construction of a 1.4-million-gallon water storage tank and the potential construction of an onsite wastewater treatment plant. Both facilities would be sited within the interior of the Arambel portion of the project site and would be located within secured areas. Additionally, large light industrial buildings would largely screen these facilities from view of surrounding land uses. As such, noise, light, glare, or odors associated with these facilities will not adversely affect nearby land uses.
	Policy PS-9.2	Recreational use of rights-of-way. Utility company rights-of-way shall be considered for use as public or private open space, trails, parkland, or other compatible passive recreational uses.	Consistent: The California Aqueduct and Delta Mendota Canal right-of-ways traverse the project site. Recreational use of these right-of-ways is currently permitted and the proposed project would continue to allow such use.
	Policy PS-9.3	Underground utilities. The City shall, where suitable, require all new electrical and communication facilities to be installed underground or, in the case of transformers, pad-mounted. The City shall actively promote the undergrounding of existing overhead facilities.	Consistent: New electrical and natural gas lines would be relocated underground. The existing overhead utility lines along Rogers Road may also be relocated underground.
Air Resources and Climate Change	Goal AR-1	To foster effective communication, cooperation, and coordination in developing and operating community and regional air quality programs.	Consistent: Relevant state and local agencies have been provided notice of the availability of this EIR. The comments of those agencies will be addressed in the Final EIR. This is consistent with promoting communication and cooperation among agencies that oversee air quality-related issues.
	Policy AR-1.1	Source regulation. The City shall review development projects using	Consistent: Criteria established by the San Joaquin Valley Unified

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		criteria established by the San Joaquin Valley Unified Air Pollution Control District in order to minimize future increases in vehicle travel and to assist in implementing appropriate indirect source regulations adopted by the Air Pollution Control District.	Air Pollution Control District has been used in assessing and minimizing the proposed project's future increases in vehicle travels as well as implementing appropriate indirect source regulations. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.
	Policy AR-1.2	APCD cooperation. The City shall work with the San Joaquin Valley Unified Air Pollution Control District to ensure the earliest practicable attainment and subsequent maintenance of federal and state ambient air quality standards.	Consistent: This EIR assesses the proposed project's air quality impacts in accordance with guidance issued by the San Joaquin Valley Air Pollution Control District as it relates to attainment and maintenance of federal and state ambient air quality standards. Mitigation measures are proposed where necessary. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.
	Policy AR-1.3	CEQA. The City shall use the CEQA process to identify and avoid or mitigate potentially significant air quality impacts of new development. The CEQA process shall be used to ensure early consultation with the San Joaquin Valley Unified Air Pollution Control District concerning air quality issues associated with specific development proposals.	Consistent: The San Joaquin Valley Air Pollution Control District has and will receive all CEQA notifications about the proposed project. The proposed project's air quality impacts are assessed in accordance with the guidance issued by the San Joaquin Valley Air Pollution Control District and mitigation measures are proposed where necessary. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.
	Policy AR-1.4	Air quality mitigation. The City shall ensure all air quality mitigation measures are feasible, implementable, and cost effective.	Consistent: This Draft EIR identifies all feasible mitigation measures for the proposed project's air quality impacts. The mitigation measures identified in the Draft EIR are widely employed within the San Joaquin Valley Air Basin and, therefore, are considered implementable and cost-effective.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy AR-1.5	Innovative strategies. The City shall encourage innovative mitigation measures to reduce air quality impacts by coordinating with the District, project applicants, and other interested parties.	Consistent: Mitigation measures addressing the reduction of air quality impacts have been developed in coordination with the San Joaquin Valley Air Pollution Control District and project applicant. Other interested parties may make comments on the mitigation measures during the Draft EIR's comment period. Such coordination allows for the creation and implementation of innovative air quality mitigation measures.
	Policy AR-1.7	Neighboring jurisdictions. The City shall work with neighboring jurisdictions and affected agencies to address cross-jurisdictional and regional transportation and air quality issues.	Consistent: Relevant state and local agencies have been provided notice of the availability of this EIR. The comments of those agencies will be addressed in the Final EIR. This is consistent with promoting communication and cooperation among agencies that oversee air quality and transportation-related issues.
	Policy AR-1.9	Air quality and planning. The City shall consider air quality when planning the land uses and transportation systems to accommodate the expected growth in this community.	Consistent: Air quality impacts from the proposed project's land use and transportation system have been analyzed as a part of this EIR. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.
	Policy AR-1.14	Public education. The City shall work to improve the public's understanding of the land use, transportation, and air quality link.	Consistent: The Draft EIR is available for public review. All comments submitted by the members of the public regarding the Draft EIR will be addressed in the Final EIR. This is consistent with the policy of improving the public's understanding of the land use, transportation, and air quality link.
	Goal AR-2	To reduce the air quality impacts of motor vehicle use.	Consistent: Mitigation included in this EIR would reduce the proposed project's air quality impacts resulting from motor vehicle use. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy AR-2.1	Trip reduction programs. The City shall promote the implementation of innovative employer-based trip reduction programs for employees.	Consistent: Employers within the proposed project would have the ability to implement trip reduction programs for employees such as carpool/vanpool programs, employee shuttles, flex time scheduling, and other similar items. Potential trip reduction programs will be tailored to the needs of the both the employer and the employees.
	Policy AR-2.5	Commute reduction. The City shall promote the expansion of employment opportunities in Patterson to reduce the volume and distance of home-to-work commute trips by motor vehicle.	Consistent: The proposed project is anticipated to employ 10,093 full-time workers at buildout. Based on the availability of local labor and anticipated population growth in the Patterson area, it is expected that most employees will be local residents, which would contribute to reducing the volume and distance of home-to-work commute trips by motor vehicle.
	Goal AR-3	To Reduce traffic congestion and vehicle trips through more efficient infrastructure and support for trip reduction programs. Reduce the air quality impacts of motor vehicle use.	Consistent: The proposed project is located near the existing I-5/ Sperry Road interchange and planned I-5/Zacharias Road (South County Expressway) interchange. This location would allow for the most efficient use of infrastructure and may also lend itself to support of trip reduction programs such as carpooling/vanpooling, employee shuttles, flex time, etc. that reduce traffic congestion and vehicle trips
	Policy AR-3.1	Priority to existing roadways. The City shall consider measures to increase the capacity of the existing road network prior to constructing more capacity (additional lanes, new freeways, etc.).	Consistent: The proposed project would utilize existing roadways and in addition construct new roadways.
	Policy AR-3.2	Promote alternate modes of travel. The City shall work with employers and developers to provide employees and residents with attractive, affordable transportation alternatives.	Consistent: The proposed project would be accessible to public transit, bicycles, and pedestrians, which is consistent with the policy of promoting alternate modes of travel.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy AR-3.4	Intersection design. Major intersections shall be designed to minimize situations (such as long vehicle delays) which can adversely affect localized air quality.	Consistent: This Draft EIR assesses the proposed project's impacts on existing and future intersections. Mitigation is proposed as necessary to ensure such intersection operate efficiently, thereby reducing air quality impact.
	Goal AR-4	Minimize exposure of the public to toxic air pollutant emissions and noxious odors from industrial, manufacturing, and processing facilities.	Consistent: Industrial and commercial uses within the project site would be required to abide by all rules and regulations regarding toxic air pollutant emissions. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.
	Policy AR-4.1	Sensitive receptors. The City shall, to the extent practicable, separate sensitive land uses from significant sources of air pollutants or odor emissions. Sensitive land uses include, but are not limited to, those that support people or other organisms that may have a significantly increased sensitivity or exposure to air pollution by virtue of their age and health (e.g. schools, day care centers, hospitals, nursing homes), status (e.g. sensitive or endangered species), or proximity to the source. The City shall require residential development projects and projects categorized as sensitive receptors to be located an adequate distance from existing and potential sources of toxic emissions such as freeways, major arterials, industrial sites, and hazardous material locations. For purposes of compliance with this policy, the City will be guided by the recommendations provided in the Air Quality and Land Use Handbook: A Community Health Perspective published by the California Air Resources Board.	Consistent: The proposed project's compliance with the recommendations provided in the Air Quality and Land Use Handbook: A Community Health Perspective published by the California Air Resources Board has been analyzed in this Draft EIR. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy AR-4.1	Industrial uses. The City shall notify, and coordinate with, the San Joaquin Valley Unified Air Pollution Control District when industrial developments are proposed that may adversely impact air quality. Such coordination may include, but is not limited to, providing assistance to applicants in complying with applicable air quality regulations.	Consistent: The San Joaquin Valley Air Pollution Control District has and will receive all CEQA notifications about the proposed project. The proposed project's air quality impacts are assessed in accordance with the guidance issued by the San Joaquin Valley Air Pollution Control District and mitigation measures are proposed where necessary. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.
	Goal AR-5	Reduce particulate emissions from sources under the jurisdiction of the city.	Consistent: Implementation of mitigation included in this EIR would ensure particulate emissions from the proposed project would be reduced. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.
	Policy AR-5.1	Particulates from grading. The City shall work with the District to reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible.	Consistent: Implementation of mitigation included in this EIR would ensure particulate emissions from the proposed project, including those from construction, grading, excavation, and demolition would be reduced to the maximum extent feasible. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.
	Policy AR-5.2	Roadways. The City shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.	Consistent: Access roads, driveways, and parking areas within the project would be paved, thereby minimizing particulate emissions and would be sized appropriately for the scale and intensity of use.
	Policy AR-5.3	City maintained roads. The City shall reduce PM ₁₀ emissions from City/County maintained roads to the maximum extent feasible.	Consistent: Implementation of mitigation included in this EIR would ensure PM ₁₀ emissions resulting from the proposed project would be reduced to the maximum extent feasible. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Goal AR-6	Reduce emissions related to energy consumption and area sources.	Consistent: Implementation of mitigation included in this EIR would reduce emissions related to energy consumption and area sources. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.
	Policy AR-6.1	Energy efficient design. The City shall work with the local energy providers and developers on voluntary incentive-based programs to encourage the use of energy efficient designs and equipment.	Consistent: The Master Development Plan would require the use of tempered windows and energy conserving landscaping throughout the project site.
	Policy AR-6.2	Energy conservation standards. The City shall cooperate with the local building industry, utilities and the District to promote enhanced energy conservation standards for new construction.	Consistent: Land uses within the proposed project would be required to comply with the most current version of Title 24, Part 6, which establishes California's Energy Efficiency Standards for Residential and Nonresidential Buildings.
	Policy AR-6.3	Vehicle idling reduction. The City shall implement circulation improvements that reduce vehicle idling.	Consistent: The proposed project's circulation improvements have been designed to allow for efficient vehicle circulation, thereby reducing vehicle idling.
	Goal AR-7	To reduce to the emission of greenhouse gases and to promote energy efficiency.	Consistent: The proposed project would comply with Title 24, Part 6 of the California Code of Regulations, which establishes California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Furthermore, mitigation proposed in this EIR would require the reduction of greenhouse gases. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.
	Policy AR-7.1	Climate Action Plan. The City shall comply with the relevant provisions of State law (i.e. AB 32 and SB 375) to minimize the effect of citywide greenhouse gas emissions associated with buildout of the General Plan. This shall be achieved through the implementation of a Climate Action Plan.	Consistent: The proposed project would comply with relevant provisions of state law (AB 32 and SB 375) to minimize the effect of greenhouse gas emissions associated with the proposed project. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy AR-7.2	Greenhouse gas reduction goal. The City shall work with the Air Resources Board and the San Joaquin Valley Unified Air Pollution Control District to comply with statewide greenhouse gas reduction goals as established in the Global Warming Solutions Act of 2006 (AB 32) for 2020, and subsequent goals.	Consistent: The NOP and NOA for this Draft EIR have been provided to the Air Resources Board and San Joaquin Valley Unified Air Pollution Control District. The proposed project's compliance with statewide greenhouse gas reduction goals is discussed in Section 3.3, Air Quality and Greenhouse Gas Emissions.
	Policy AR-7.3	Greenhouse gas emissions from new development. The City shall implement measures to reduce the emission of greenhouse gases from new development. Such measures may include, but are not limited to, the following: a. Discouraging auto-dependent patterns of development; b. Promoting compact, mixed-use, pedestrian-friendly, and transit oriented development; c. Promoting energy-efficient building design and site planning using either Build It Green and LEED™ Silver standards for residential and non-residential buildings, respectively; and d. Working to improve the ratio of jobs to housing.	Consistent: Mitigation proposed in this EIR would require the implementation of measures to reduce greenhouse gas emission from the proposed project. Refer to Section 3.3, Air Quality and Greenhouse Gas Emissions for further discussion.
	Policy AR-7.4	Passive solar heating. To the extent feasible, the City shall require the orientation of buildings to maximize passive solar heating during cool seasons, avoid solar heat gain in warm seasons, enhance natural ventilation and effective use of daylight, and to maximize opportunities for the installation of solar panels.	Consistent: Project buildings would be subject to the CalGreen buildings standards. To the extent that passive solar is required by the current or future editions of CalGreen, project building would comply.
Parks and Recreation	Goal PR-2	To promote the provision of private recreational facilities and opportunities.	Consistent: The proposed project's Master Development Plan allows health clubs, gymnasiums, gymnastic schools, and exercise business as permitted uses subject to Administrative Approval within the Industrial

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
			Business Park portion of the project. As such, these types of private recreational facilities and opportunities could be end uses of the proposed project.
	Policy PR-2.2	Employee recreation. The City shall promote the inclusion of private outdoor and indoor recreation facilities in large commercial/industrial projects as a benefit for employees and as a means of reducing demand on public facilities.	Consistent: The proposed project would include pedestrian and bicycle facilities that could be used for employee recreation. Additionally, the Master Development Plan does not limit the ability of any end uses to provide onsite employee recreational facilities (exercise facilities, basketball courts, etc.).
	Goal PR-5	To protect Patterson's Native American heritage.	Consistent: This EIR evaluates potential impacts on archaeological and historic resources and sets forth mitigation measures to ensure that impacts are reduced to a level of less than significant. This is consistent with the objective of protecting Patterson's Native American heritage. Refer to Section 3.5, Cultural Resources for further discussion.
	Policy PR-5.1	Review of development. The City shall refer development proposals that may adversely affect archaeological sites to the California Archaeological Inventory, Central California Information Center, at California State University, Stanislaus, for review and comment.	Consistent: Information regarding the proposed project was sent to the Central California Information Center for review and comment. Information provided in the response has been incorporated into this Draft EIR and mitigation has been proposed as necessary. Refer to Section 3.5, Cultural Resources for further discussion.
	Policy PR-5.2	Native American consultation requirements. The City shall continue to comply with the requirements of Government Code Sections 65352.3 and 65352.4 which require the City to 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.	Consistent: Information regarding the proposed project was sent to the Native American Heritage Commission for consultation with Native American Tribes. Information provided in the response has been incorporated into this Draft EIR and mitigation has been proposed as necessary. Refer to Section 3.5, Cultural Resources for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy PR-5.3	Mandatory avoidance of impacts. The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting with applicable State and local agencies and organizations, conducting a site evaluation as may be indicated, and mitigating any adverse impacts according to the recommendations of a qualified archaeologist. City implementation of this policy shall be guided by Appendix K of the State CEQA Guidelines.	Consistent: A Phase I Cultural Resource Assessment was prepared for the project site and is provided in Appendix E. The assessment was prepared by a qualified archaeologist and included consultation with the California Archeological Inventory and Stanislaus State University, site evaluation of the project area, and recommendations for mitigating potential impacts. These recommendations have been incorporated as mitigation measures in this EIR. Refer to Section 3.5, Cultural Resources for further discussion.
	Policy PR-5.4	Protection of Native American cultural sites. The City shall ensure the protection of archaeological sites that may be culturally significant to Native Americans, even if they have lost their scientific or archaeological integrity through previous disturbance; sites that may have religious value, even though no artifacts are present; and sites that contain artifacts which may have intrinsic value, even though their archaeological context has been disturbed.	Consistent: The proposed project's potential to impact Native American cultural sites has been analyzed as a part of this Draft EIR. Implementation of proposed mitigation would ensure the protection of such sites should any be located onsite.
	Goal PR-6	To protect the area's archaeological resources	Consistent: This EIR evaluates potential impacts on archaeological resources and sets forth mitigation measures to ensure that impacts are reduced to a level of less than significant. This is consistent with the objective of protecting the area's archaeological resources. Refer to Section 3.5, Cultural Resources for further discussion.
	Policy PR-6.1	Protection of archaeological resources. The City shall provide for the protection of both known and potential archaeological resources. To avoid significant damage to important	Consistent: A Phase I Cultural Resource Assessment was prepared for the project site and is provided in Appendix E. The assessment was prepared by a qualified archaeologist and

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		archaeological sites, all available measures, including purchase of the property in fee or easement, shall be explored at the time of a development proposal. Where such measures are not feasible and development would adversely affect identified archaeological or paleontological resources, mitigation shall be required in accordance with the relevant provisions of federal and State laws.	included consultation with the California Archeological Inventory at Stanislaus State University, site evaluation of the project area, and recommendations for mitigating potential impacts, including impacts for potential archaeological resources. These recommendations have been incorporated as mitigation measures in this EIR and have been developed in accordance with relevant provisions of federal and state laws. Refer to Section 3.5, Cultural Resources for further discussion.
	Policy PR-6.2	Archaeologically sensitive areas. Development within an archaeologically sensitive area shall require a preliminary site survey by a qualified archaeologist knowledgeable in Native American cultures, prior to a determination of the potential environmental impacts of the project.	Consistent: A Phase I Cultural Resource Assessment was prepared for the project site and is provided in Appendix E. The assessment was prepared by a qualified archaeologist and included consultation with the California Archeological Inventory at Stanislaus State University, consultation with the Native American Heritage Commission, site evaluation of the project area, and recommendations for mitigating potential impacts, including impacts for potential archaeological resources. These recommendations have been incorporated as mitigation measures in this EIR. Refer to Section 3.5, Cultural Resources for further discussion.
	Policy PR-6.3	Archaeological resources present. Where a preliminary site survey finds substantial archaeological resources, before permitting construction, the City shall require a mitigation plan to protect the resources. Possible mitigation measures include: • Requiring the presence of a qualified professional during initial grading or trenching; project redesign; • Covering with a layer of fill;	Consistent: A Phase I Cultural Resource Assessment was prepared for the project site and is provided in Appendix E. The preliminary site survey did not indicate the presence of substantial archaeological resources. Nonetheless, recommendations for mitigating potential impacts, including impacts to accidentally discovered archaeological resources. Refer to Section 3.5, Cultural Resources for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		excavation, removal and curation in an appropriate facility under the direction of a qualified professional.	
	Policy PR-6.4	Qualified archaeologist present. Where substantial archaeological resources are discovered during construction or grading activities, all such activities in the immediate area of the find shall cease until a qualified archaeologist knowledgeable in Native American cultures can determine the significance of the resource and recommend alternative mitigation measures.	Consistent: Mitigation included in this EIR requires that should a substantial archaeological resource be discovered during construction or grading activities, all such activities in the immediate area of the find shall cease until a qualified archaeologist can determine the significance of the resource and recommend further action. Refer to Section 3.5, Cultural Resources for further discussion.
	Policy PR-6.5	Archaeological site records. The City shall establish and maintain archaeological site records about known sites. Specific archaeological site information shall be kept confidential to protect the resources. The City shall maintain, for public use, generalized maps showing known areas of archaeological sensitivity.	Consistent: As a part of the Phase I Cultural Resource Assessment prepared for the project a search for archaeological site records was conducted at the Central California Information Center, at California State University, Stanislaus. Refer to Section 3.5, Cultural Resources for further discussion.
Health and Safety	Goal HS-1	To prevent loss of life, injury, and property damage due to geologic and seismic hazards.	Consistent: Implementation of mitigation included in this EIR would ensure that the proposed project would not result in the loss of life, injury, and property damage due to geologic seismic hazards. Refer to Section 3.6, Geology, Soils, and Seismicity for further discussion.
	Policy HS-1.1	Geotechnical reports. The City shall require the preparation of geotechnical reports and impose appropriate mitigation measures to ensure, within the limits of technical and economic feasibility, that new structures are able to withstand the effects of seismic activity, including liquefaction, slope instability, expansive soils or other geologic hazards.	Consistent: Mitigation proposed in this EIR would require the completion of design-level geotechnical reports to be completed and the resulting information incorporated into project plans for review and approval by the City. Implementation of mitigation would ensure new structures are able to withstand the effects of seismic activity, including liquefaction, slope instability,

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
			expansive soils or other geologic hazards. Refer to Section 3.6, Geology, Soils, and Seismicity for further discussion.
	Policy HS-1.2	Seismic resistant utilities. Underground utilities, particularly water and natural gas mains, shall be designed to withstand seismic forces in accordance with state requirements.	Consistent: Utility infrastructure installed as a part of the proposed project would conform to all California Building Standards Code requirements, including those related to seismic stability.
	Goal HS-2	To prevent loss of life, injury, and property damage due to flooding.	Consistent: The project site is located outside a 100-year floodplain, and therefore, would not be located within a flood-prone area. Furthermore, the onsite storm drainage system would be designed to properly handle a peak storm event as required by the City. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy HS-2.1	Flood control management. The City shall prepare and adopt flood management plans and practices aimed at protecting life and property from the harmful effects of flooding. As part of this effort, the City shall establish criteria for: a. Evaluating whether new development should be located in flood hazard zones; b. Identifying construction methods or other methods to minimize damage if new development is located in flood hazard zones, and c. Maintaining the structural and operational integrity of essential public facilities during flooding.	Consistent: The proposed project is located outside a 100-year floodplain and, therefore, would not be located in a flood hazard zone.
	Policy HS-2.6	Flood protection for non-residential development. Non-residential development shall be anchored and flood-proofed to prevent damage from the 100-year flood or, alternatively, elevated to at least 12 inches above the 100-year flood level.	Consistent: The proposed project is located outside a 100-year floodplain and, therefore, would not be located in a flood hazard zone.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy HS-2.8	Provision of storm drains. Construction of storm drainage improvements shall be required, as appropriate, to prevent flooding during periods of heavy rainfall.	Consistent: A Storm Drain Analysis has been prepared for the proposed project. Implementation of the resulting recommendations would ensure that onsite storm drainage is appropriately sized to prevent flooding during periods of heavy rainfall.
	Policy HS-2.9	Prevention of siltation. The City shall impose appropriate conditions on grading projects performed during the rainy season to ensure that silt is not conveyed to storm drainage systems.	Consistent: Mitigation is proposed as part of this EIR that would require the implementation of stormwater quality protection measures during construction and site grading. This mitigation measure would ensure that silt is not conveyed to storm drainage systems. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy HS-2.10	Flooding impacts of new development. New development with the potential to increase flooding impacts on adjoining or downstream properties shall be prohibited.	Consistent: A Storm Drain Analysis has been prepared for the proposed project. Implementation of the resulting recommendations would ensure that onsite storm drainage is appropriately sized and would result in flooding impacts on adjoining or downstream properties.
	Policy HS-2.12	Buildable site. Parcels shall not be created upon which the presence of easements, floodplain, marsh or riparian habitat, or other features would leave insufficient land to build and operate structures. This policy shall not apply to open space lots specifically created for dedication to the City or another appropriate party for habitat protection, flood control, drainage, or wetland maintenance.	Consistent: The proposed project would create four lots that would be dedicated for landscaping use. Each lot contains narrowly shaped, non-buildable areas located between internal roadways and I-5 or the California Aqueduct. As such, the proposed project would not create parcels that contain features that leave insufficient land to build and operate structures.
	Policy HS-2.13	Bridge construction. New and modified bridge structures shall not cause an increase in water surface elevations of the 100-year floodplain exceeding one foot, unless analysis clearly indicates that the physical and/or economic use of upstream or downstream property will not be adversely affected.	Consistent: The new roadway crossing of Del Puerto Creek would be required to either fully span the waterway or (if not feasible) locate piers as far as possible from the low flow channel. This would ensure that bridge structure would not cause an increase in the 100-year flood elevation.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy HS-2.14	Runoff control. The City shall require all new urban development projects to incorporate runoff control measures to minimize peak flows of runoff and/or assist in financing or otherwise implementing comprehensive drainage plans. All such control measures shall consider potential affects to adjacent property owners.	Consistent: The proposed project would implement a storm drainage system that would convey runoff to nine basins in accordance with the City of Patterson's standards. The basins would serve as groundwater recharge facilities. A Storm Drain Analysis was completed by GDR Engineering and concluded that all pipes and basins have the adequate capacity to handle the storm drainage flow.
	Policy HS-2.16	Flood hazard mitigation prior to development. The City shall not approve new development in areas subject to a 100-year flood event, based on Federal Emergency Management Agency (FEMA) or on other updated mapping acceptable to the City, unless and until the flood hazard has been mitigated. Such mitigation may be accomplished by one, or a combination of, the following: • Compliance with Title 17 of the City's Municipal Code, Flood Hazard areas. • Installation of flood control improvements along Del Puerto Creek and/or Salado Creek. • Avoidance of flood prone areas.	Consistent: The proposed project is located outside an area subject to a 100-year flood event based maps prepared by FEMA.
	Policy HS-2.17	Flood hazard mitigation prior to development. The City shall require any development on land subject to a 100- year flood event, based on Federal Emergency Management Agency (FEMA) or on other updated mapping acceptable to the City, to conform to National Flood Insurance Program (NFIP) standards.	Consistent: The proposed project is located outside an area subject to a 100-year flood event based maps prepared by FEMA and the City of Patterson.
	Policy HS-2.18	Low Impact Development. New development shall incorporate provisions for low impact development as defined by as minimizing or eliminating pollutants in storm water through natural processes and maintaining pre-development hydrologic	Consistent: Mitigation is proposed as part of this EIR that would require the implementation of stormwater quality protection measures during construction and operation. This mitigation measure would ensure that pollutants in stormwater would be

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		characteristics, such as flow patterns, surface retention, and recharge rates.	minimized or eliminated. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Goal HS-3	To prevent loss of life, injury, and property damage due to wildland and structural fires, explosions and release of hazardous materials.	Consistent: The proposed project is not located in an area susceptible to wildland fire. Risks resulting from structural fires would be reduced through the project's incorporation of fire suppression measures. Furthermore, the proposed project would not include uses that are generally associated with explosions or the release of significant quantities of hazardous materials. Refer to Section 7, Effects Found Not To Be Significant.
	Policy HS-3.1	Water service for fire protection. The City shall require that new development provides all necessary water service, fire hydrants, and roads consistent with Fire Department standards.	Consistent: The proposed project would comply with all building code requirements, including those related to fire suppression systems and site access.
	Policy HS-3.2	Fire flows. The City shall ensure that adequate water fire-flows are maintained throughout the city and shall regularly monitor fire-flows to ensure adequacy. New development shall comply with the following minimum fire-flow rates:	Consistent: The proposed project would be designed to provide the minimum fire flow required by the latest adopted edition of the California Fire Code.
		Development Category	
		Industrial/Other Business Districts	
	Policy HS-3.4	Fire protection codes. All new development shall be constructed according to fire safety and structural stability standards contained in the latest adopted California Fire and Building Codes and related regulations.	Consistent: The proposed project would comply with all applicable fire safety and structural stability standards contained in the latest edition of the California Building Standards Code.
	Policy HS-3.5	On-site suppression. The City shall minimize the dependence of new commercial and industrial developments on City firefighting personnel and equipment by requiring on-site fire suppression systems which include sprinklers and pumps, as deemed necessary.	Consistent: The proposed project would include fire suppression systems, including sprinklers and pumps.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy HS-3.7	Access for fire protection equipment. The City shall ensure that new development provides for adequate fire equipment access and, where appropriate, includes the use of fire-resistant landscaping and building materials.	Consistent: The proposed project would comply with all California Building Standards Code requirements, including those related to fire-resistant materials and site access.
	Goal HS-5	To protect city residents from the harmful and undesirable effects of excessive noise.	Consistent: This EIR includes analysis of the proposed project's potential to expose nearby sensitive residential land uses to excessive levels of noise. The analysis found that the proposed project would not have the potential to significantly impact nearby residential uses and, therefore, no mitigation is necessary. Refer to Section 3.10, Noise for further discussion.
	Policy HS-5.1	Noise levels resulting from non-transportation sources. New development of noise-sensitive uses shall not be allowed where the noise level due to non-transportation noise sources will exceed the noise level standards of Table HS-1, as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated into the development design to achieve the standards specified in Table HS-1.	Consistent: This EIR includes analysis of the proposed project's potential to expose nearby sensitive land uses to excessive levels of non-transportation noise. The analysis found that the proposed project would not have the potential to impact sensitive receptors with excessive levels of non-transportation noise; therefore, no mitigation is necessary. Refer to Section 3.10, Noise for further discussion.
	Policy HS-5.2	Noise levels resulting from non-transportation noise sources. Noise levels resulting from non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table HS-1 as measured immediately within the property line of lands designated for noise-sensitive uses. This policy does not apply to noise sources associated with agricultural operations on lands zoned for agricultural uses.	Consistent: This EIR includes analysis of the proposed project's potential to expose nearby sensitive land uses to excessive levels of non-transportation noise. The analysis found that the proposed project would not have the potential to impact noise sensitive with excessive levels of non-transportation noise; therefore, no mitigation is necessary. Refer to Section 3.10, Noise for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy HS-5.3	Acoustical analysis required. Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table HS-1 at existing or planned noise-sensitive uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. (Requirements for the content of an acoustical analysis are identified in Table HS-2.) (Note: For the purposes of these noise policies, transportation noise sources are defined as traffic on public roadways, railroad line operations and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Other noise sources are presumed to be subject to local regulations, such as a noise control ordinance.)	Consistent: This EIR includes an assessment of noise impacts in accordance with the provisions of this policy and the requirements set forth in Table HS-2. The performance standards in Table HS-1 were used to determine the significance of noise impacts. Refer to Section 3.10, Noise for further discussion.
	Policy HS-5.4	Noise standards. The feasibility of proposed projects with respect to existing and future transportation noise levels shall be evaluated by comparison to Figure HS-1.	Consistent: The allowable noise level for commercial and industrial land use as outlined in Figure HS-1 was used as the criteria for assessing the proposed projects impacts to transportation noise levels. Refer to Section 3.10, Noise for further discussion.
	Policy HS-5.5	Noise sensitive land uses. New development of noise-sensitive land uses shall not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table HS-3, unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to the levels specified in Table HS-1.	Consistent: The proposed project would not result in the development of new noise-sensitive land uses.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy HS-5.6	Transportation noise sources and mitigation. Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table HS-1 at outdoor activity areas or interior spaces of existing noise-sensitive land uses in either the incorporated or unincorporated areas.	Consistent: This EIR includes analysis of the proposed project's potential to expose nearby sensitive land uses to levels of noise exceeding allowable thresholds identified in Table HS-1. The analysis found that the proposed project would not have the potential to impact noise sensitive and, therefore, no mitigation is necessary. Refer to Section 3.10, Noise for further discussion.
	Policy HS-5.7	Acoustical analysis required. Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table HS-1 or the performance standards of Table HS-3, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.	Consistent: The proposed project would not result in the development of new noise-sensitive land uses.
	Policy HS-5.8	Minimize the use of noise barriers. Where noise mitigation measures are required to achieve the standards of Tables HS-1 and HS-3, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall only be considered a supplemental means of achieving the noise standards after all practical design-related noise mitigation measures have been integrated into the project.	Consistent: The noise requirements set forth in Table HS-1 and Table HS-3 were used in this EIR's assessment of noise impacts. The analysis found that the proposed project would not have the potential to impact noise sensitive and, therefore, no mitigation is necessary. Refer to Section 3.10, Noise for further discussion.
	Goal HS-6	To prevent crime and promote the protection of people and property.	Consistent: Patterson Police Services was consulted regarding crime prevention matters, and the agency's recommendations are incorporated as mitigation. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy HS-6.2	Deterrence through design. The City shall encourage the use of physical site planning as an effective means of preventing crime. Developers shall design	Consistent: The Master Development Plan encourages the use of lighting and fencing as appropriate for prevention of crime and in accordance with design

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		open spaces, parking lots, parks, play areas, and other public spaces so they can be under continuous surveillance by residents. To this end, the Police Department shall participate in the development review process to ensure that crime prevention considerations are incorporated in the design of residential, commercial, industrial, and public facility projects.	guidelines. Patterson Police Services was consulted about public safety and its recommendations for the proposed project are incorporated as mitigation. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Goal HS-7	To protect the health and safety of Patterson residents from the harmful effects of the use, transport and disposal of hazardous substances.	Consistent: The proposed project's Master Development Plan contemplates a wide range of end uses for the proposed project (e.g., call centers, research and development, manufacturing, warehouse, wholesale distribution, apparel shops, banks, department stores, drug stores, hotels, and retail stores), which typically are not associated with the use of large quantities of hazardous materials. Regardless, any uses that handle hazardous materials would be required to abide by all state and Federal rules and regulations regarding the transport and disposal of hazardous substances, thereby protecting the health and safety of Patterson residents.
	Policy HS-7.4	Industrial facilities. The City shall work with responsible agencies to ensure that all industrial facilities are constructed and operated in accordance with the most current safety and environmental protection standards.	Consistent: Industrial facilities located within the proposed project would be constructed and operated in accordance with the most current state and federal laws regarding safety and environmental protection.
	Policy HS-7.5	Storage. Industries that store and process significant quantities of hazardous or toxic materials shall provide a buffer zone between the installation that houses such substances and the property boundaries of the facility sufficient to protect the public in the event of the release or leak of the materials.	Consistent: The proposed project's Master Development Plan contemplates a wide range of end uses for the proposed project, including call centers, research and development, manufacturing, software development, warehouse, wholesale distribution, apparel shops, banks and other financial institutions, department stores, drug stores, fast food restaurants,

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
			hotels and motels, and retail stores. These industries do not typically use large quantities of hazardous materials, which limits the potential for air and water pollution and leaks or spills. Likewise, the proposed Master Development Plan prohibits industries such as chemical/explosives manufacturing, refining, mining, and other uses that are typically associated with the use of large quantities of hazardous materials.
Natural Resources	Goal NR-1	To protect and preserve the quality of water from local watersheds, groundwater resources, and water bodies including creeks, reservoirs, and the San Joaquin River.	Consistent: Mitigation is proposed as part of this EIR that would require the implementation of stormwater quality protection measures, including Best Engineering Practices, during construction and operations. These measures would treat runoff prior to offsite discharge and, therefore, would contribute to the protection and preservation of surface and groundwater quality. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy NR-1.1	Open space conservation. The City shall conserve open space areas and drainage canals to protect water resources within the local watershed and the San Joaquin River.	Consistent: The proposed project would conserve the open space associated with the section of Del Puerto Creek located within the project site. The use of stormwater detention basins would provide additional open space areas used to direct stormwater and, therefore, would protect water resources within the local watershed.
	Policy NR-1.2	Stormwater quality. The City shall implement measures to minimize the discharge of pollutants and sediment into Salado Creek, Del Puerto Creek and the San Joaquin River. (See Goal PS-3 for more policies on stormwater quality.)	Consistent: Mitigation is proposed as part of this EIR that would require the implementation of stormwater quality protection measures, including Best Engineering Practices, during construction and operations. These measures would treat runoff prior to offsite discharge and,

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
			therefore, would contribute to the protection and preservation of surface and groundwater quality. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy NR-1.4	Sedimentation. The City shall continue to support local, regional, and statewide efforts to minimize the discharge of sediment into waterways, including Salado Creek, Del Puerto Creek and the San Joaquin River.	Consistent: Mitigation is proposed as part of this EIR that would require the implementation of stormwater quality protection measures, including Best Engineering Practices, during construction and operations. These measures would treat runoff prior to offsite discharge and, therefore, would contribute to the minimization of sediment discharge into local waterways. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy NR-1.5	New development. The City shall require new development to protect the quality of water bodies and drainage systems through adaptive site design, stormwater management, and the implementation of best management practices (BMPs). The City shall apply the following principles of Low Impact Development in the review of development projects for purposes of minimizing runoff and potential water quality impacts: a. Make Sensitive Choices in Site Layout. Identify the most sensitive natural areas and, where possible, leave them undeveloped. To the extent possible, set back development from creeks, wetlands, and riparian habitats. Preserve significant trees. Conform the site along natural land forms, avoid excessive grading and disturbance of vegetation and soils, and mimic the site's natural drainage patterns. Where	Consistent: Mitigation is proposed as part of this EIR that would require the implementation of stormwater quality protection measures, including Best Engineering Practices, during construction and operations. These measures would treat runoff prior to offsite discharge and, therefore, would contribute to the protection and preservation of surface and groundwater quality. The use of stormwater detention basins would allow for infiltration into permeable soils. Refer to Section 3.8, Hydrology and Water Quality for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		possible, concentrate development on portions of the site with less permeable soils, and preserve areas that can promote infiltration. To the extent possible, limit overall coverage of paving and roofs by designing compact structures, narrower and shorter streets and sidewalks, smaller parking lots, and indoor or underground parking. Where possible, detain and retain runoff throughout the site. Use drainage design elements such as depressed landscape areas, vegetated buffers, and bioretention facilities (consisting of a shallow surface reservoir, a layer of imported planting medium, and a gravel underlayer with perforated pipe underdrains) as amenities and focal points within the site and landscape design. b. Use Pervious Surfaces. In new buildings and major retrofits, evaluate the technical and economic feasibility of green roofs. Identify where permeable pavements, such as crushed aggregate, turf block, unit pavers, pervious concrete, or pervious asphalt could be substituted for impervious concrete or asphalt paving. c. Disperse Runoff to Adjacent Pervious Areas. Where possible, direct roof downspouts across pervious areas. A maximum 2:1 ratio between impervious and pervious surfaces is recommended. Receiving pervious areas should be relatively flat, and soils should be amended as needed to promote infiltration. Similarly, parking areas should be designed so that runoff can sheet flow to landscaped areas. Where feasible, use curb cuts or no	

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		curbs to allow runoff to flow to vegetated areas. d. Direct runoff to bioretention facilities, flow-through planters, dry wells, or cisterns. On densely developed sites, and where runoff from impervious roofs and paved areas cannot be dispersed to landscaping, consider directing runoff to facilities designed to detain and treat runoff before letting it seep away slowly. Dry wells or infiltration basins may be used if soils are sufficiently permeable and geotechnical considerations allow. Bioretention facilities can be a suitable option for many sites.	
	Policy NR-1.7	CEQA. The City shall use the California Environmental Quality Act (CEQA) process to identify and avoid (or mitigate) potential groundwater pollution problems resulting from new urban development.	Consistent: This EIR evaluates the potential for potential groundwater pollution problems resulting from new urban development. Refer to Section 3.8, Hydrology and Water Quality for further discussion.
	Policy NR-1.10	Water conservation. The City shall promote the efficient use of water.	Consistent: The proposed project would incorporate water efficient measures such as drought tolerant landscaping. Refer to Section 3.12, Public Services and Utilities for further discussion.
	Policy NR-1.11	Groundwater recharge areas. Groundwater recharge is an important component of the City's long-term water supply program. Areas within the General Plan area suitable for groundwater recharge shall be preserved and incorporated into the design of new development.	Consistent: The proposed project includes the construction of stormwater basins that would facilitate groundwater recharge. As such, groundwater recharge has been incorporated into the design of the proposed project.
	Goal NR-2	To protect and preserve local agricultural lands and to prevent their premature conversion to urban uses.	Consistent: The proposed project would be phased over a period of 20 years in a manner that would allow economically viable agricultural land to remain in production up until the point that economic conditions warrant

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
			conversion to urban use. As such, premature conversion of agricultural lands would not occur.
	Policy NR-2.1	Agricultural land preservation. Undeveloped lands that are State designated as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland shall be preserved, to the greatest extent feasible, for open space or agricultural use.	Consistent with Mitigation: The project site contains Prime Farmland, Farmland of Statewide Importance, and Unique Farmland all of which would be converted to non-agricultural use. However, the City of Patterson General Plan designates the project site as “General Commercial” and “Light Industrial.” These designations signify that the City has contemplated the conversion of this agricultural land to urban uses and, therefore, does not view the project area as a preferred location for permanent agricultural uses. Regardless, mitigation is proposed requiring the applicant to preserve agricultural land outside the Patterson Planning Area at a ratio of no less than 1:1, consistent with the objective of this policy.
	Policy NR-2.2	Compact development. The City shall encourage infill development within existing urbanized areas of the city in order to minimize pressure to convert agricultural lands to urban uses. Conversely, the City shall support the continuation of agricultural uses on lands for urban uses until urban development is imminent.	Consistent: The proposed project would be an urban development consisting of commercial and industrial uses adjacent to existing commercial uses located in an area well served by adjacent roadways. There are no other areas within the City limits or the currently adopted sphere of influence that is of an appropriate size and land use designation to support the proposed project. As such, the proposed project is not an appropriate infill development.
	Policy NR-2.4	Support for County agricultural land preservation. The City shall support strategies adopted by Stanislaus County aimed at maintaining agricultural lands in viable farming units in areas not designated for urban development.	Consistent: Mitigation is proposed as part of this EIR that would require the applicant to preserve Important Farmland acreage in Stanislaus County at no less than a 1:1 ratio. Refer to Section 3.2, Agricultural Resources for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy NR-2.5	Regional farmland preservation. The City shall continue to work with the County and other jurisdictions to implement conservation plans that preserve prime farmland.	Consistent: Mitigation is proposed as part of this EIR that would require the applicant to preserve Important Farmland acreage in Stanislaus County at no less than a 1:1 ratio. Refer to Section 3.2, Agricultural Resources for further discussion.
	Policy NR-2.9	Williamson Act. The City shall allow cancellation of Williamson Act contracts only if the City Council finds that cancellation is consistent with State law.	Consistent: The proposed project is located on lands encumbered by Williamson Act contracts. Cancellation of the contracts have occurred consistent with state law.
	Policy NR-2.11	Soil conservation. The City shall encourage soil conservation practices as recommended by the Natural Resources Conservation Service.	Consistent: Mitigation is proposed as part of this EIR that would require the applicant to implement a Stormwater Pollution Prevention Plan that would identify potential sources of erosion or sedimentation and implement Best Management Practices to ensure the reduction of erosion and sedimentation, thereby encouraging soil conservation. Refer to Section 3.6, Geology, Soils, and Seismicity for further discussion.
	Goal NR-3	To protect natural open space areas, sensitive native vegetation, and wildlife communities and habitat.	Consistent: The proposed project's impacts to sensitive native vegetation, wildlife communities and habitat have been addressed in this EIR and mitigation has been proposed as necessary to ensure impacts are less than significant. Refer to Section 3.4, Biological Resources for further discussion.
	Policy NR-3.2	Protection of sensitive species. A project with the potential to adversely impact special status species or their habitat, shall provide evidence of compliance with the relevant provisions of state and federal laws relating to the preservation of rare, threatened, or endangered species and their habitat prior to project approval and/or prior to construction as determined by the	Consistent: Mitigation is proposed as part of this EIR that would require the project applicant to conduct pre-construction surveys for the presence of sensitive species. The surveys would be conducted in accordance with applicable federal and state guidelines and regulations. Refer to Section 3.4, Biological Resources for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		requirements set forth in the federal and state Endangered Species Acts, the federal Clean Water Act, the federal Rivers and Harbors Act and the Implementation Measures provided in Appendix NR.	
	Policy NR-3.3	On-site resource preservation. The City shall encourage new development to preserve on-site natural elements that contribute to the community's native plant and wildlife species value and to its aesthetic character.	Consistent: The proposed project would site all building envelopes away from the Del Puerto Creek alignment. Furthermore, mitigation is proposed as part of this EIR that would require a minimum 100-foot setback from the creek's high water mark, or outside edge of existing riparian vegetation, whichever is greater. As such, the proposed project would preserve onsite natural elements.
	Policy NR-3.4	Agency coordination. The City shall support, and participate in, local and regional efforts of local, state and federal resource agencies (e.g. Stanislaus County, California Department of Fish and Game, Army Corps, United States Fish and Wildlife Service) to protect, restore and maintain viable, contiguous areas of habitat for sensitive plant and animal species. (see also Implementation Measures and Appendix NR)	Consistent: Mitigation is proposed as part of this EIR that would require the applicant to conduct pre-construction surveys for the presence of sensitive species. The surveys would be conducted in accordance with applicable local, federal and state guidelines and regulations. Refer to Section 3.4, Biological Resources for further discussion
	Policy NR-3.5	Project-specific surveys for rare plants. Where future development projects have the potential to impact natural plant communities, the City shall require the project applicant to conduct a rare plant survey prepared by a qualified biologist in accordance with applicable guidelines of the USF&WS, CDFG and CNPS. The survey shall identify and map any existing rare, threatened, or endangered plant species. If any of these species are found, mitigation measures shall be developed within the project-level CEQA document	Consistent: The project site is significantly disturbed, dominated by orchards and row crops, and has minimal areas of natural plant communities. No sensitive plant species were observed on the project site during the reconnaissance-level site survey. As such, the project does not have the potential to significantly impact sensitive plant species. Refer to Section 3.4, Biological Resources for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		and implemented with performance monitoring to avoid significant impacts. The project applicant shall be required to consult with the CDFG and USFWS regarding appropriate mitigation for potential impacts to each sensitive plant species found to occur at the project site. Mitigation may include (but is not limited to) the acquisition and permanent protection of habitat for the subject species of concern, in addition to the implementation of project-specific mitigation measures designed to reduce potential impacts to individual animals. These measures shall be based on the biological requirements of each species found to occur at a particular site, as well as a complete description of the proposed project and its potential impacts to the subject species. (see also Implementation Measures and Appendix NR)	
	Policy NR-3.6	Wildlife surveys for individual projects. Where future development projects have the potential to adversely impact sensitive wildlife resources, the City shall require the project applicant to conduct a biological field survey to assess habitat suitability and wildlife utilization of the project site. All biological field surveys shall be prepared consistent with the requirements of relevant state and federal resources agencies, and each project applicant shall consult with applicable state and federal agencies regarding the results of these surveys and appropriate mitigation measures. Additionally, species-specific surveys shall be conducted in accordance with current guidelines for each rare, threatened, and endangered animal species potentially occurring at the site. If any sensitive wildlife species are found to occur on or utilize the	Consistent: A biological field survey was conducted as a part of this EIR to assess habitat suitability and wildlife utilization of the project site. Mitigation is proposed as a part of this EIR to ensure potential impacts to sensitive wildlife species are reduced to less than significant. Refer to Section 3.4, Biological Resources for further discussion.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		existing habitat as a proposed project site, the project applicant shall be required to consult with CDFG and USFWS regarding appropriate mitigation prior to any City action on a development entitlement request. Mitigation may include (but is not limited to) the acquisition and permanent protection of habitat for the subject species of concern, in addition to the implementation of project-specific mitigation measures designed to reduce the potential impacts for individual animals. These measures shall be based on the biological requirements of each species found to occur at a particular site, as well as a complete description of the proposed projects and its potential impacts to the subject species. (see also Implementation Measures and Appendix NR)	
	Policy NR-3.7	Riparian habitat protection. The City shall preserve the ecological integrity of creek corridors, canals, and drainage ditches that support riparian resources by preserving native riparian plants and, to the extent feasible, removing invasive nonnative plants. If preservation of the ecological integrity of existing resources is found to be infeasible, adverse impacts to riparian resources shall be fully mitigated consistent with the requirements of applicable state and federal regulations. (see also Implementation Measures and Appendix NR)	Consistent: The project site contains riparian habitat related to Del Puerto Creek, which is found in the northwestern portion of the proposed project site. Mitigation is proposed as a part of this EIR that would require the preparation of a Jurisdiction Delineation and implementation of resulting recommendations as well as a minimum set back of 100-feet from the Del Puerto Creek high water mark or outside edge of existing riparian vegetation, whichever is greater. As such, the proposed project would preserve the ecological integrity of Del Puerto Creek. Refer to Section 3.4, Biological Resources for further discussion.
	Policy NR-3.8	Wetland protection. The City shall preserve and protect wetland resources including creeks, rivers, ponds, marshes, vernal pools, and other seasonal wetland areas, to	Consistent: Mitigation is proposed as a part of this EIR that would require the preparation of a Jurisdiction Delineation and implementation of resulting

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
		the extent feasible. If preservation of the ecological integrity of existing wetland resources is found to be infeasible, adverse impacts to such resources shall be fully mitigated consistent with the requirements of applicable state and federal regulations. (see also Implementation Measures and Appendix NR)	recommendations, including securing adequate regulatory permits or the mitigation for the loss of jurisdictional features. Such mitigation would be conducted in accordance with the requirements of applicable state and federal regulations. Refer to Section 3.4, Biological Resources for further discussion.
	Policy NR-3.9	Monitoring. Monitoring of mitigation and restoration activities shall be consistent with requirements for each species or habitat as prescribed by the relevant regulatory jurisdictional agencies. For listed or candidate species, species of special concern, or sensitive habitats for which no mitigation or avoidance measures have been published, the City shall require evidence of coordination with the responsible agencies prior to acceptance of mitigation, avoidance measures, or monitoring requirements.	Consistent: Mitigation is proposed as a part of this EIR that would require mitigation for special-status species be conducted in accordance with relevant regulatory jurisdictional agencies. Refer to Section 3.4, Biological Resources for further discussion.
	Policy NR-3.10	Open space conservation. The City shall continue to preserve, protect, and provide access to designated open space areas that may be established along the San Joaquin River, Del Puerto Creek, and undevelopable floodplains.	Consistent: The proposed project would site all building envelopes away from the Del Puerto Creek alignment. Furthermore, mitigation is proposed as part of this EIR that would require a minimum 100-foot setback from the creek's high water mark, or outside edge of existing riparian vegetation, whichever is greater. As such, the proposed project would preserve existing open space along Del Puerto Creek.
	Goal NR-4	To maintain a sustainable, diverse, and stable economy that supports the basic needs of all segments of the community.	Consistent: The proposed project is capable of supporting a wide range of industries. Such industries would provide a variety of business, consumer, and employment opportunities within the Patterson city limits, which is consistent with contributing to a sustainable, diverse, and stable economy that supports the basic needs of all segments of the community.

Table 3.9-2 (cont.): General Plan Consistency Analysis

Element	Goal/Policy		Consistency Determination
	No.	Text	
	Policy NR-4.3	Patterns of Development. The City shall promote patterns of development that provide a complimentary range of land uses to serve the daily needs of nearby residents and minimize dependence on the automobile.	Consistent: The proposed project is capable of supporting a wide range of industries. Such industries would provide a variety business, consumer, and employment opportunities within the Patterson city limits. These characteristics are consistent with the policy of serving the daily needs of nearby residents and minimize dependence on the automobile.
	Goal NR-6	To incorporate sustainable building practices into the City's development regulations and fleet vehicle use.	Consistent: Project buildings would be subject to the CalGreen buildings standards, which include standards for green building. The City of Patterson has adopted by the current edition of CalGreen and is expected to adopt future editions when issued.
	Policy NR-6.1	Sustainable building practices. The City shall encourage the use of sustainable, energy efficient construction techniques. The City shall identify and remove regulatory or procedural barriers to implementing green building practices, such as updating codes, guidelines, and zoning, and shall ensure that all plan review and building inspection staff are trained in green building materials, practices, and techniques.	Consistent: Project buildings would be subject to the CalGreen buildings standards, which include standards for energy efficient construction.
	Policy NR-6.2	Passive solar. The City shall encourage passive solar design (passive heating and cooling) to avoid or minimize cooling needs through building orientation of all new development.	Consistent: Project buildings would be subject to the CalGreen buildings standards. To the extent that passive solar is required by the current or future editions of CalGreen, project building would comply.
Source: City of Patterson, 2010. Michael Brandman Associates, 2011.			

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Municipal Code Consistency

Impact LU-2:	The proposed project would not conflict with any of the applicable provisions of the City of Patterson Municipal Code.

Impact Analysis

This impact will evaluate the consistency of the proposed project with the applicable portions of the City of Patterson Municipal Code.

West Patterson Business Park Expansion Project

The proposed project involves the adoption of a Master Development Plan. The Master Development Plan establishes the regulatory framework that will govern development of the proposed project. The Master Development Plan is intended to supplement the General Plan by establishing area-specific development standards and design guidelines that will apply to new development within the plan boundaries.

The Master Development Plan establishes the West Patterson Industrial Business Park, West Patterson Light Industrial and General Commercial zoning district regulations. The Master Development Plan applies development standards that are modified, in some instances, from the Patterson Municipal Code, Title 18, Zoning. Development must comply with all provisions of the Municipal Code unless specifically modified by the Master Development Plan. Where differences occur, the Master Development Plan mandatory requirements and design guidelines shall prevail.

The Master Development Plan is organized into the following chapters:

- Chapter I, Introduction
- Chapter II, Land Use
- Chapter III, Guidelines for the Design of New Development
- Chapter IV, Guidelines for Commercial Development
- Chapter VI, Infrastructure
- Appendix
 - Chapter 18.62 West Patterson Industrial Business Park District (WPIBP)
 - Chapter 18.66 West Patterson Light Industrial District (WPLI)
 - Chapter 18.44 General Commercial District (GC)

Of the chapters listed above, Chapters II, III and IV constitute the most significant portions of the Master Development Plan as they set forth the permitted uses and development standards for the proposed uses. The relevant requirements of each chapter are discussed below.

Chapter II Land Use

The Master Development Plan sets forth three industrial zoning classifications: West Patterson Industrial Business Park (WPIBP) and West Patterson Light Industrial (WPLI)) and the General Commercial (CG) zoning designations.

West Patterson Industrial Business Park (WPIBP)

The West Patterson Industrial Business Park (WPIBP) district is applied to areas appropriate for light industrial and business park land uses, including low-intensity manufacturing and assembly processes, research and development, corporate headquarters, offices, medical and health facility uses and other uses as specified in this chapter. The land uses allowed and development standards required within the WPIBP district are intended to protect adjacent areas from impacts while allowing indoor, clean, and quiet industry. Land uses in the WPIBP zoning district are often organized as a business park, with tenants that may include some commercial and office activities. The WPIBP zoning district is consistent with the light industrial land use designation of the City of Patterson general plan.

West Patterson Light Industrial (WPLI)

The West Patterson Light Industrial (WPLI) zoning district is applied to areas appropriate for light industrial and manufacturing, warehousing, offices and assembly uses. Land uses allowed in the WPLI zoning district will not create objectionable noise, smoke, odor, dust, noxious gases, glare, heat, vibration, or industrial wastes. The WPLI zoning district is consistent with the light industrial land use designation of the general plan.

General Commercial (GC)

The General Commercial district stabilizes, improves, and protects the characteristics of commercial businesses and to provide adequate locations for stores, shops and offices that supply commodities or performing services for residents of the City as a whole.

Chapter III Guidelines for the Design of New Development

Chapter III provides guidelines to aid designers, the public, and decision-makers by expressing the vision for the quality and attractiveness expected from new development in the Plan Area Chapter III of the Master Development Plan provides guidelines for the following: general qualities of design; colors and materials; site planning; parking and access; signs; landscaping, walls, screening and lighting; and arterials and streetscape improvements. As with any development, implementation of development within the proposed project would be required to undergo the City's development review process, which would determine if a design review is required. This process would ensure that development within the proposed project is designed in accordance with applicable provisions of the Master Development Plan and Municipal Code.

Chapter IV Guidelines for Commercial Development

Chapter IV establishes general principles of design applicable to all commercial development as well as guidelines for large-scale retail centers developed within the Master Development Plan area. The guidelines are intended to ensure compatibility of the various individual development projects undertaken to implement the Master Development Plan and to establish a cohesive design identity.

Conclusion

The proposed Master Development Plan would facilitate the orderly and planned development of the proposed land uses on the project site. The Master development Plan requires structures to be developed in accordance with a set of design standards and guidelines to encourage sensitive, integrated, innovative and sustainable project designs. In summary, the proposed Master Development Plan complies with all applicable requirements of the Patterson Municipal Code.

The proposed Master Development Plan would be incorporated into the Municipal Code and, therefore, represents a self-mitigating aspect of the proposed project. Because the Master Development Plan complies with all applicable requirements for such land use plan, it would be consistent and compatible with the Municipal Code. Impacts would be less than significant.

Offsite Utility Alignments

The offsite utility alignment would be constructed in compliance with applicable guidelines and regulations of the Master Development Plan. Because the Master Development Plan complies with all applicable requirements for utilities, it would be consistent and compatible with the Municipal Code. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Airport Land Use Plan Consistency

Impact LU-3:	The proposed project would not conflict with any of the applicable provisions of the Stanislaus County Airport Land Use Commission Plan.

Impact Analysis

The project site is located approximately 2,300 feet west of the Patterson Airport and is within Conditions Area 4, “Other Land in the Planning Area.” The Stanislaus County Airport Land Use Commission Plan defines Conditions Area 4 as lands within the airport planning areas with possible height or noise problems envisioned in the future. The Airport Land Use Commission Plan identifies all commercial and

industrial uses as “compatible” uses within this planning area. The Airport Land Use Commission Plan does not establish any height limits or density restrictions for land uses within Conditions Area 4.

The Airport Land Use Commission Plan provides general statements regarding the compatibility of land uses within each Condition Area. Table 3.9-3 summarizes the proposed project’s consistency would be consistent with all statements. Impacts would be less than significant.

Table 3.9-3: Airport Land Use Commission Plan Consistency Analysis

Conditions Area 4 (Other Land in the Planning Area)	
General Statement	Consistency Determination
1. Usage should be airport oriented or be compatible with airport location.	Consistent: The proposed project consists of the development business park, general commercial, and light industrial uses, and would represent the continued development of similar existing non-residential uses in the project vicinity (e.g., West Patterson Business Park and Villa del Lago). The existing uses were previously found to be compatible with Patterson Airport; therefore, the proposed project’s uses would be compatible as well. All commercial and industrial land use activities are identified as “compatible” within Conditions Area 4 by the Airport Land Use Commission Plan.
2. Non-reflective materials to be used in buildings and signs where reflection would cause a flying hazard.	Consistent: The proposed project’s structures would employ white roofs, which are non-reflective. Additionally, maximum height of the proposed project’s buildings would be 45 feet above grade, and the project site is not located under any commonly used approach or departure patterns for the Patterson Airport. As such, potentially reflective features such as windows or decorative architectural features would not be visible to pilots in the air.
3. Soundproofing where appropriate to reduce noise to acceptable level according to State guidelines.	Consistent: The proposed project consists of the development business park, general commercial, and light industrial uses, which are not classified as a noise-sensitive land use by the City of Patterson General Plan. Furthermore, as discussed in Section 3.9, Noise, aviation activities were not observed to be a significant source of noise at the project site. Therefore, aviation noise soundproofing is not necessary.
4. No electromagnetic transmissions that would interfere with operation of aircraft.	Consistent: The proposed project does not include any uses that would emit substantial sources of electromagnetic fields (e.g., radar or radio transmitters) that could interfere with aircraft operations.
5. All bulk storage of volatile or flammable liquid be underground.	Consistent: The proposed project consists of the development business park, general commercial, and light industrial uses. The only potential end uses that would engage in bulk storage of volatile or flammable liquids would be gas stations or fueling facilities, which would store fuel in underground storage tanks. No other end uses would be expected to engage in bulk storage of volatile or flammable liquids (refineries, bulk liquids facilities, etc.).
6. Lights for any purpose shall be constructed and used in such a manner as not to create a hazard for pilots or air traffic control.	Consistent: All exterior light fixtures intended for safety and security purposes would be shielded, recessed, or directed downward. Low-intensity, decorative “up lights” would be permitted, provided that they focus on specific features and do not illuminate surrounding roadways or properties. As such, project-related light fixtures would not create a hazard for pilots or air traffic control. Refer to Section 3.1, Aesthetics, Light, and Glare for further discussion.
Source: Stanislaus County 2004, Michael Brandman Associates, 2012.	

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

LAFCO Annexation and Sphere of Influence Criteria Consistency

Impact LU-4: The proposed project would not conflict with any of the applicable criteria set forth by Stanislaus LAFCO for annexation or Sphere of Influence expansion.

Impact Analysis

The proposed project would require approval from Stanislaus Local Agency Formation Commission (LAFCO) for annexation of the 1,119-gross acre project site into the Patterson city limits. Pursuant to state law and Stanislaus LAFCO procedures, a city's corporate limits must be at a minimum co-terminus with its Sphere of Influence. The applicant is seeking to expand the Sphere of Influence in a manner that renders it co-terminus with the city limits contemplated by the annexation.

As such, this EIR will address project consistency with the criteria set forth in California Government Code Section 56668 (also known as the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000), which establishes factors LAFCO agencies must use in reviewing adjustments to jurisdictional boundaries. Table 3.9-4 provides a consistency analysis with California Government Code Section 56668 for the annexation request.

Table 3.9-4: California Government Code Section 56668 (Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000) Consistency Analysis

No.	Factor	Consistency Determination
1	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.	Consistent: The project site is contiguous to the Patterson city limits on its eastern and southern boundaries. The project site is designated for commercial and industrial land use by the City of Patterson General Plan. The project site contains cultivated agricultural land uses planted as orchards and row crops and a single rural residence. I-5 and the California Aqueduct form the western and southern boundary of the project site. Both the freeway and the aqueduct sit atop raised embankments that range from 20 to 140 feet in elevation above the project site. The Diablo Range foothills are located west of the freeway. Zacharias Road forms the northern boundary of the project site.

Table 3.9-4 (cont.): California Government Code Section 56668 (Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000) Consistency Analysis

No.	Factor	Consistency Determination
		North of the roadway are orchards. Reaches of the California Aqueduct, Delta-Mendota Canal, and Del Puerto Creek extend through the project site. Rogers Road and the Villa del Lago highway commercial center form the eastern boundary of the project site. Land uses east of Rogers Road consist of orchards, row crops, and distribution centers associated with the existing West Patterson Business Park. hotels, gas stations, restaurants, and a recreational vehicle park. The Villa del Lago highway commercial center is located south of the Delta-Mendota Canal and primarily consists of visitor-serving commercial uses, including The City of Patterson General Plan projects a buildout population of 66,673 persons, which is expected to occur sometime after 2030 and is a substantial increase compared to the current 2011 population of 20,560.
2	The 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. “Services,” as used in this subdivision, refers to governmental services whether or not the services are services which would be provided by local agencies subject to this division, and includes the public facilities necessary to provide those services.	Consistent: The proposed project consists of the development of approximately 13.47 million square feet of light industrial, business park, and general commercial uses and associated infrastructure. Such uses require urban levels of public services, which currently are not provided to the project site. The project applicant will be obligated to pay the full or proportionate cost of all infrastructure improvements necessary to serve these proposed uses. Mitigation included as a part of this EIR would ensure infrastructure improvements implemented by the project applicant are appropriately designed or compensated to maintain service levels. Refer to Section 3.12, Public Services and Utilities for further discussion.
3	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.	Consistent: The proposed project would facilitate the development of higher and better uses within the project boundaries. This would be expected to yield economic benefits in form of new jobs, an expanded tax base, and greater economic activity. The proposed project would further social interests—albeit indirectly—largely as a result of the economic benefits. For example, the economic benefits (e.g., new jobs and tax revenues) may yield advancements in local health, safety, and welfare.

Table 3.9-4 (cont.): California Government Code Section 56668 (Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000) Consistency Analysis

No.	Factor		Consistency Determination
			In terms of impacts on the local governmental structure of the County, the primary change is that project site would fall under the jurisdiction of the City of Patterson. The project site is currently within the City of Patterson General Plan’s Planning Area and is designated for urban use; thus, it had been previously contemplated that this area would ultimately join the City of Patterson at a future, undetermined date. As such, this would not represent a significant impact on the local governmental structure of the County.
4	The conformity of both the proposal and its anticipated effects with both the adopted commission policies on providing planned, orderly, efficient patterns of urban development, and the policies and priorities set forth in Section 56377. (Section 56377 is reproduced below)		Consistent: The project area contains 722.64 acres of Prime Farmland, 278.17 acres of Unique Farmland, and 81.38 acres of Farmland of Statewide Importance, for a total of 1,082.19 acres of Important Farmland. Buildout of the proposed project would result in the conversion of this farmland acreage to non-agricultural use. This conversion would be consistent with Section 56377 for the following reasons: 1) The proposed project contains phasing provisions that are intended to allow for the logical and orderly development of urban uses within the project boundaries. Economic conditions will dictate the exact timing and characteristics of each phase. As such, it would be expected that less economically viable agricultural land would be developed first and economically viable, prime agricultural land would be developed later. 2) The project area is located adjacent to the existing West Patterson Business Park to the east and I-5 to the west. Implementation of the proposed project would annex the project site into the City of Patterson and its sphere of influence. Although the West Patterson Business Park contains vacant, nonprime agricultural lands that could support a portion of the proposed project’s light industrial and business park uses, the zoning for the Business Park does not allow the proposed project’s general commercial uses. As such, there are no existing vacant or nonprime agricultural lands of a similar area and land use designation currently available for development within Patterson that would accommodate all of the uses contemplated by the proposed project.
	56377.	In reviewing and approving or disapproving proposals which could reasonably be expected to induce, facilitate, or lead to the conversion of existing open-space lands to uses other than open-space uses, the commission shall consider all of the following policies and priorities: (a) Development or use of land for other than open-space uses shall be guided away from existing prime agricultural lands in open-space use toward areas containing nonprime agricultural lands, unless that action would not promote the planned, orderly, efficient development of an area. (b) Development 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.	

Table 3.9-4 (cont.): California Government Code Section 56668 (Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000) Consistency Analysis

No.	Factor	Consistency Determination
		Furthermore, approximately 70 percent of the West Patterson Business Park is developed or entitled for development; therefore, it reasonable to expect that economic factors would create demand for expansion of the business park. 3) The project site is within the City of Patterson General Plan Area; therefore, its development has been accounted and planned for in the General Plan.
5	The effect of the proposal on maintaining the physical and economic integrity of agricultural lands, as defined by Section 56016. (Section 56016 is reproduced below) 56016. “Agricultural lands” means land currently used for the purpose of producing an agricultural commodity for commercial purposes, land left fallow under a crop rotational program, or land enrolled in an agricultural subsidy or set-aside program.	Consistent: The project area contains 749.19 acres of Prime Farmland, 278.17 acres of Unique Farmland, and 81.38 acres of Farmland of Statewide Importance, for a total of 1,108.69 acres of Important Farmland. The proposed project contains phasing provisions that are intended to allow for the logical and orderly development of urban uses within the project boundaries. Economic conditions will dictate the exact timing and characteristics of each phase. As such, these phasing provisions would allow for the continued use of agricultural lands until the point that higher and better uses are pursued. This is consistent with the objective of maintaining the physical and economic integrity of agricultural lands.
6	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.	Consistent: .The project site consists of 26 parcels totaling 1,119 gross acres. The triangular-shaped project site is bounded by I-5 and the California Aqueduct (west and south), Zacharias Road (north), and Rogers Road and Villa del Lago highway commercial center (east). The boundaries of the project site follow defined features and would not create islands or corridors of unincorporated territory. As such, annexation of the project site would be considered logical and orderly.
7	Consistency with city or county general and specific plans.	Consistent: The proposed project is consistent with the City of Patterson General Plan. Refer to Impact LU-1.
8	The sphere of influence of any local agency which may be applicable to the proposal being reviewed.	Consistent: The proposed project would include the expansion of the City of Patterson Sphere of Influence to include the proposed annexation area. The project site is currently within the City of Patterson’s General Plan Area.
9	The comments of any affected local agency or other public agency.	Consistent: The Draft EIR will be circulated to relevant federal, state, and agencies. Responses to comments will be provided in the Final EIR.

Table 3.9-4 (cont.): California Government Code Section 56668 (Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000) Consistency Analysis

No.	Factor	Consistency Determination
10	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.	Consistent: The project site will be served with municipal services provided by the City of Patterson for fire/emergency medical services, police, water, sewer, and storm drainage. The Master Development Plan describes the service and infrastructure to be implemented. Water, sewer, and storm drain analysis have been completed to ensure the adequacy of proposed and existing facilities. The Draft EIR addresses impacts to fire/emergency medical services and police and proposed mitigation as necessary to ensure sufficient service levels are maintained. Refer to Section 3.12, Public Services and Utilities for further discussion.
11	Timely availability of water supplies adequate for projected needs as specified in Section 65352.5. (Section 65352.5 is reproduced below)	Consistent: A Water Supply Assessment has been prepared that indicates long-term water supplies are available to serve the proposed project. Refer to Section 3.12, Public Services and Utilities for further discussion.
	65352.5. (a) The Legislature finds and declares that it is vital that there be close coordination and consultation between California's water supply agencies and California's land use approval agencies to ensure that proper water supply planning occurs in order to accommodate projects that will result in increased demands on water supplies. (b) It is, therefore, the intent of the Legislature to provide a standardized process for determining the adequacy of existing and planned future water supplies to meet existing and planned future demands on these water supplies. (c) Upon receiving, pursuant to Section 65352, notification of a city's or a county's proposed action to adopt or substantially amend a general plan, a public water system, as defined in Section 116275 of the Health and Safety Code, with 3,000 or more service connections, shall provide the planning agency with the following information, as is appropriate and relevant: (1) The current version of its urban water management plan,	

Table 3.9-4 (cont.): California Government Code Section 56668 (Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000) Consistency Analysis

No.	Factor	Consistency Determination
	adopted pursuant to Part 2.6 (commencing with Section 10610) of Division 6 of the Water Code. (2) The current version of its capital improvement program or plan, as reported pursuant to Section 31144.73 of the Water Code. (3) A description of the source or sources of the total water supply currently available to the water supplier by water right or contract, taking into account historical data concerning wet, normal, and dry runoff years. (4) A description of the quantity of surface water that was purveyed by the water supplier in each of the previous five years. (5) A description of the quantity of groundwater that was purveyed by the water supplier in each of the previous five years. (6) A description of all proposed additional sources of water supplies for the water supplier, including the estimated dates by which these additional sources should be available and the quantities of additional water supplies that are being proposed. (7) A description of the total number of customers currently served by the water supplier, as identified by the following categories and by the amount of water served to each category: (A) Agricultural users. (B) Commercial users. (C) Industrial users. (D) Residential users. (8) Quantification of the expected reduction in total water demand, identified by each customer category set forth in paragraph (7), associated with future implementation of water use reduction measures identified in the water supplier's urban water management plan.	

Table 3.9-4 (cont.): California Government Code Section 56668 (Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000) Consistency Analysis

No.	Factor	Consistency Determination
	(9) Any additional information that is relevant to determining the adequacy of existing and planned future water supplies to meet existing and planned future demands on these water supplies.	
12	The extent to which the proposal will affect a city or cities and the county in achieving their respective fair shares of the regional housing needs as determined by the appropriate council of governments consistent with Article 10.6 (commencing with Section 65580) of Chapter 3 of Division 1 of Title 7. (Section 65580 is reproduced below.) 65580. The Legislature finds and declares as follows: (a) The availability of housing is of vital statewide importance, and the early attainment of decent housing and a suitable living environment for every Californian, including farmworkers, is a priority of the highest order. (b) The early attainment of this goal requires the cooperative participation of government and the private sector in an effort to expand housing opportunities and accommodate the housing needs of Californians of all economic levels. (c) The provision of housing affordable to low- and moderate-income households requires the cooperation of all levels of government. (d) Local and state governments have a responsibility to use the powers vested in them to facilitate the improvement and development of housing to make adequate provision for the housing needs of all economic segments of the community. (e) The Legislature recognizes that in carrying out this responsibility, each local government also has the responsibility to consider economic, environmental, and fiscal factors and community goals	Consistent: The City of Patterson General Plan designates the project site’s land use as “Light Industrial” and “General Commercial.” As such, the General Plan Housing Element does not identify this area as a potential housing site for affordable housing. Therefore, the proposed project would not have any effect on the City’s ability to meet its regional housing requirements.

Table 3.9-4 (cont.): California Government Code Section 56668 (Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000) Consistency Analysis

No.	Factor	Consistency Determination
	set forth in the general plan and to cooperate with other local governments and the state in addressing regional housing needs.	
13	Any information or comments from the landowner or owners, voters, or residents of the affected territory.	Consistent: The project site is controlled by two parties (Arambel and KDN). Property owners, voters, and residents in the vicinity of the project site will be noticed about the availability of the CEQA documents and public meetings. These individuals will have the opportunity to submit comments to both the City of Patterson and Stanislaus LAFCO.
14	Any information relating to existing land use designations	Consistent: The City of Patterson General Plan designates the project site's land use as "Light Industrial" and "General Commercial." The Stanislaus County General Plan designates the project site as Agriculture. The Stanislaus County Zoning Ordinance designates the project site as A-2-40 (General Agriculture). Note that the City's land use designations would be legally binding following annexation.
15	The extent to which the proposal will promote environmental justice. As used in this subdivision, "environmental justice" means the fair treatment of people of all races, cultures, and incomes with respect to the location of public facilities and the provision of public services	Consistent: Although the proposed project does not purport to alleviate any alleged environmental injustices, it would facilitate the logical and orderly development of the western portion of the City Patterson, including creating new economic opportunities and implementing improvements to infrastructure (e.g., water, sewer, storm drainage, roadways, etc.) that advances the interests of public health, safety, and welfare, and the greater good of the community. These characteristics are consistent with the objective of fair treatment of all people with respect to the location of public facilities and the provision of public services.
Source: Michael Brandman Associates, 2012.		

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

3.10 - Noise

3.10.1 - Introduction

This section describes the existing noise setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on noise modeling performed by Michael Brandman Associates. The noise modeling output is included in this EIR as Appendix F.

3.10.2 - Environmental Setting

Noise Fundamentals

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit that expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies that are audible to the human ear.

Noise Descriptors

Noise equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (L_{eq}) represents a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. The peak traffic hour L_{eq} is the noise metric used by California Department of Transportation (Caltrans) for traffic noise impact analyses.

The Day-Night Average Level (L_{dn}) is the weighted average of the intensity of a sound, with corrections for time of day and averaged over 24 hours. The time of day corrections require the addition of 10 decibels to sound levels at night between 10 p.m. and 7 a.m. While the Community Noise Equivalent Level (CNEL) is similar to the L_{dn} , it has another addition of 4.77 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these periods because, compared with daytime hours, there is a decrease in the ambient noise levels during the evening and nighttime hours, which creates an increased sensitivity to sounds. For this reason, the sound seems louder in the evening and nighttime hours and is weighted accordingly. Due to the additional evening penalty CNEL values are always higher than L_{dn} values; however, the difference is usually between 0 and 1 dB. Since CNEL and L_{dn} values are approximately the same, the City of Patterson Noise Element uses CNEL and L_{dn} noise descriptors interchangeably. However, since non-transportation noise standards in the Noise Element are based on the same daytime and

nighttime split that is used for L_{dn} , the L_{dn} standard has been used in this analysis to assess transportation-related impacts on noise-sensitive land uses.

Another noise descriptor that is used primarily for the assessment of aircraft noise impacts is the Sound Exposure Level, which is also called the Single Event Level (SEL). The SEL descriptor represents the acoustic energy of a single event (e.g., an aircraft overflight) normalized to a one-second event duration. This is useful for comparing the acoustical energy of different events involving different durations of the noise sources. The SEL is based on an integration of the noise during the period when the noise first rises within 10 dBA of its maximum value and last falls below 10 dBA of its maximum value. The SEL is often 10 or more dBA greater than the L_{max} , since the SEL logarithmically adds the L_{eq} for each second of the duration of the noise.

Tone Noise

A pure tone noise is a noise produced at a single frequency and laboratory tests have shown the humans are more perceptible to changes in noise levels of a pure tone. For a noise source to contain a “pure tone,” there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to “stand out” against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contiguous one-third octave bands by:

- 5 dB for center frequencies of 500 hertz (Hz) and above
- 8 dB for center frequencies between 160 and 400 Hz
- 15 dB for center frequencies of 125 Hz or less

Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source, ground absorption, atmospheric effects and refraction, and shielding by natural and man-made features. Sound from point sources such as air conditioning condensers radiate uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). However, in order for the point source drop-off rate to provide accurate results, the nearest receiver needs to be placed a minimum distance away from the source that is greater than double the width of the noise source. Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models: soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, compared with a 6.0 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources, a 4.5 dBA/DD is typically observed for soft-site conditions compared with the 3.0 dBA/DD drop-off rate for hard-site conditions. Caltrans research has shown that the use of soft-site conditions is more appropriate for the application of the Federal Highway Administration (FHWA) traffic noise prediction model used in this analysis. Further, the study area is located in a semi-rural environment, and either landscaping or native vegetation exists along the sides of all analyzed roadways, which is more appropriately represented by soft-site conditions.

Traffic Noise Prediction

The level of traffic noise depends on the three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires. Because of the logarithmic nature of traffic noise levels, a doubling of the traffic volume (assuming that the speed and truck mix do not change) results in a noise level increase of 3 dBA. Based on the FHWA community noise assessment criteria, this change is “barely perceptible,” for reference a doubling of perceived noise levels would require an increase of approximately 10 dBA. The truck mix on a given roadway also has an effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. For a noise barrier to work, it must be high enough and long enough to block the view of a road. A noise barrier is most effective when placed close to the noise source or receiver. A noise barrier can achieve a 5-dBA noise level reduction when it is tall enough to break the line of sight. When the noise barrier is a berm instead of a wall, the noise attenuation can be increased by another 3 dBA.

Construction Noise Assumptions

The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston.

Table 3.10-1 provides a list of the construction equipment measured along with the associated measured noise emissions and measured percentage of typical equipment use per day. From this acquired data, the FHWA developed the Roadway Construction Noise Model, which may be used for the prediction of construction noise. For the purposes of this analysis, the Roadway Construction Noise Model will be used to calculate the construction equipment noise emissions.

Table 3.10-1: Construction Equipment Noise Emissions and Usage Factors

Equipment	Acoustical Use Factor ¹ (percent)	Spec 721.560 L _{max} @ 50 feet ² (dBA, slow ³)	Actual Measured L _{max} @ 50 feet ⁴ (dBA, slow)
Auger Drill Rig	20	85	84
Backhoe	40	80	78
Bar Bender	20	80	N/A
Compactor (ground)	20	80	83
Compressor (air)	40	80	78
Concrete Batch	15	83	N/A
Concrete Mixer Truck	40	85	79
Concrete Pump	20	82	81
Concrete Saw	20	90	90
Crane	16	85	81
Dozer	40	85	82
Dump Truck	40	84	76
Excavator	40	85	81
Flat Bed Truck	40	84	74
Front End Loader	40	80	79
Generator	50	82	81
Grader	40	85	N/A
Jackhammer	20	85	89
Paver	50	85	77
Pneumatic Tools	50	85	85
Pumps	50	77	81
Roller	20	85	80
Tractor	40	84	N/A
Vibrating Hopper	50	85	87
Vibratory Concrete Mixer	20	80	80
Welder/Torch	40	73	74

Table 3.10-1 (cont.): Construction Equipment Noise Emissions and Usage Factors

Equipment	Acoustical Use Factor ¹ (percent)	Spec 721.560 L _{max} @ 50 feet ² (dBA, slow ³)	Actual Measured L _{max} @ 50 feet ⁴ (dBA, slow)
Notes: ¹ Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday. ² Spec 721.560 is the equipment noise level utilized by the Roadway Construction Noise Model program. ³ The “slow” response averages sound levels over 1-second increments. A “fast” response averages sound levels over 0.125-second increments. ⁴ Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s. Source: Federal Highway Administration, 2006.			

Groundborne Vibration Fundamentals

Groundborne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of groundborne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although groundborne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Groundborne noise is an effect of groundborne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may consist of the rattling of windows or dishes on shelves.

Vibration Descriptors

Several different methods are used to quantify vibration amplitude, such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Because of the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels; it is denoted as (L_v) and is based on the rms velocity amplitude. A commonly used abbreviation is “VdB,” which in this text, is when L_v is based on the reference quantity of 1 microinch per second.

Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans, whose threshold of perception is around 65 VdB. Offsite sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible groundborne noise or vibration.

Vibration Propagation

The propagation of groundborne vibration is not as simple to model as airborne noise. This is because noise in the air travels through a relatively uniform medium, while groundborne vibrations travel through the earth, which may contain significant geological differences. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh

waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a push-pull fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or side-to-side and perpendicular to the direction of propagation. All three types of vibration propagation result in earth movement that can be measured through the use of a vibration meter; however, a vibration meter only captures the amount of movement and cannot decipher between the different types of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. However, in order for this drop-off rate to provide accurate results, the nearest receiver needs to be placed a minimum distance away from the source that is greater than double the width of the vibration source. As stated above, this drop-off rate can vary greatly, depending on the soil, but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

Construction-Related Vibration Level Prediction

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table 3.10-2 gives approximate vibration levels for particular construction activities. The data in the table provide a reasonable estimate for a wide range of soil conditions.

Table 3.10-2: Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity (inches/second)	Approximate Vibration Level (L_v) at 25 feet
Pile driver (impact)	1.518 (upper range) 0.644 (typical)	112 104
Pile driver (sonic)	0.734 (upper range) 0.170 (typical)	105 93
Clam shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall)	0.008 (in soil) 0.017 (in rock)	66 75
Vibratory Roller	0.210	94

Table 3.10-2 (cont.): Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity (inches/second)	Approximate Vibration Level (L _v) at 25 feet
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58
Source: Federal Transit Administration, 2006.		

Existing Noise Environment

Noise in the project study area is primarily created from vehicles on Interstate 5 (I-5) and nearby roadways and from stationary sources associated with the industrial uses located east of the project site. The nearby sensitive receptors consist of single-family residential homes located north of Zacharias Road, and the Kit Fox RV Park and the Best Western Plus Villa Del Lago Inn located east of Rogers Road.

To determine the existing noise level environment, a short-term, peak-hour noise measurement was taken at one locations and long-term noise measurements were taken at three locations in the project study area. Noise measurement locations were selected in the field based on the methodology presented in Section 5.3.1.2 of the Caltrans Technical Noise Supplement (TeNS) with the intent of representatively sampling of the existing noise environment. Exhibit 3.10-1 depicts the noise measurement locations.

Noise Measurement Results

Short-Term Peak Noise Measurement

The short-term peak-hour noise level measurement captured the noise created from a loading area and is presented in Table 3.10-3. The short-term noise measurement printout is provided in Appendix F.

Table 3.10-3: Existing (Ambient) Short-Term Noise Level Measurement

Site No. ¹	Site Description	Primary Noise Source	Start Time (Duration hr:min)	Noise Level ² (dBA)
M1	Located east of the project site, approximately 20 feet south of Grainger's southern truck loading area and approximately 800 feet east of Rogers Road.	Trucks, fork lifts, backup beepers and other alarms, and forced air ventilation system	9:35 a.m. (1:00)	47.9 L _{eq} 67.0 L _{max}

Table 3.10-3 (cont.): Existing (Ambient) Short-Term Noise Level Measurement

Site No. ¹	Site Description	Primary Noise Source	Start Time (Duration hr:min)	Noise Level ² (dBA)
Notes: ¹ Site location shown on Exhibit 3.10-1. ² Noise measurement taken on December 6, 2011. Source: Michael Brandman Associates, 2012.				

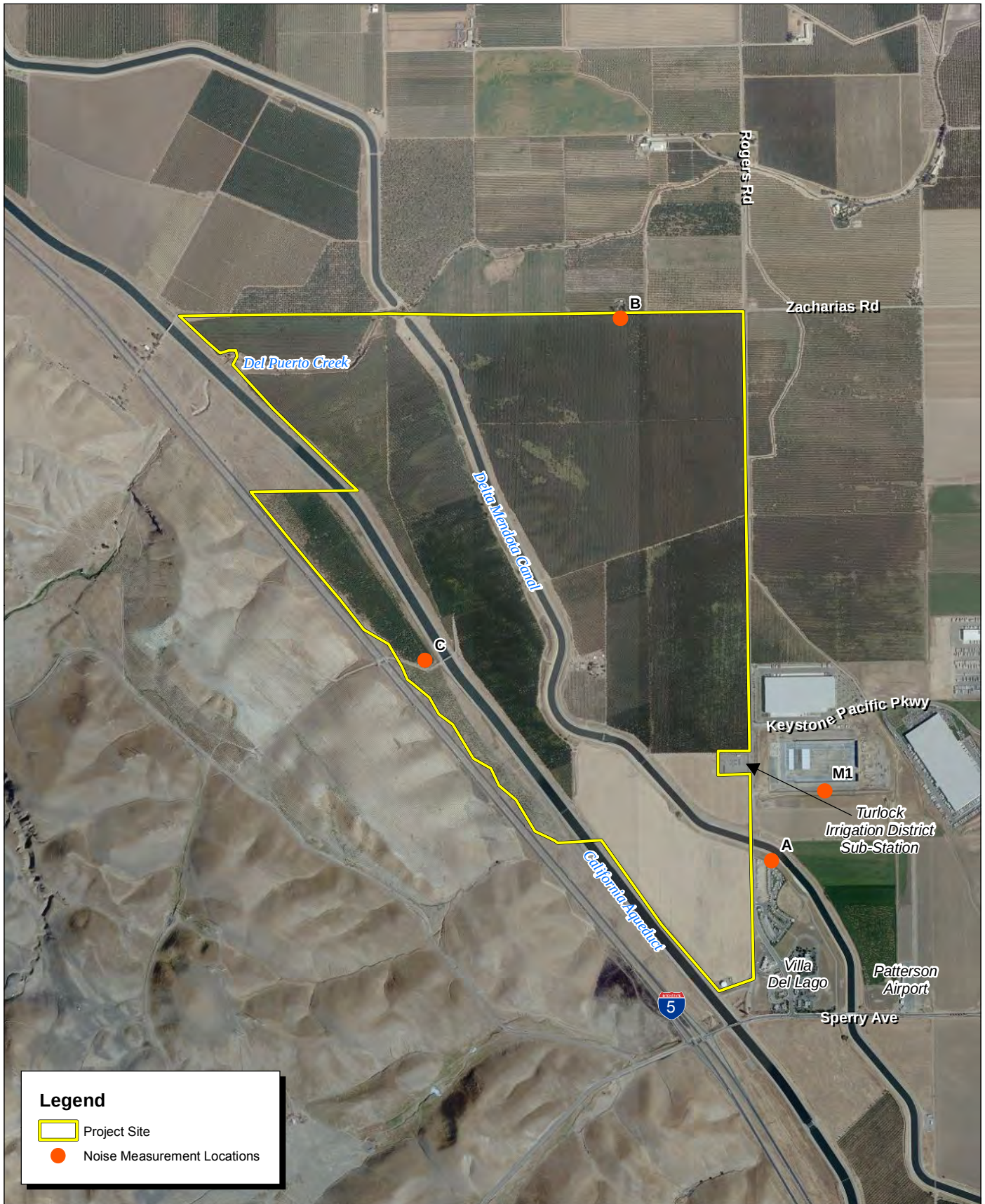
Long-Term Measurement Results

The results of the long-term noise level measurements are presented in Table 3.10-4. The measured sound pressure levels in dBA have been used to calculate the minimum and maximum L_{eq} averaged over 1-hour intervals. Table 3.10-4 also shows the L_{eq} , L_{max} , and L_{dn} , based on the entire measurement time. In addition, a graph of the calculated L_{eq} averaged over 1-hour intervals for the long-term noise measurements are shown in Exhibit 3.10-2.

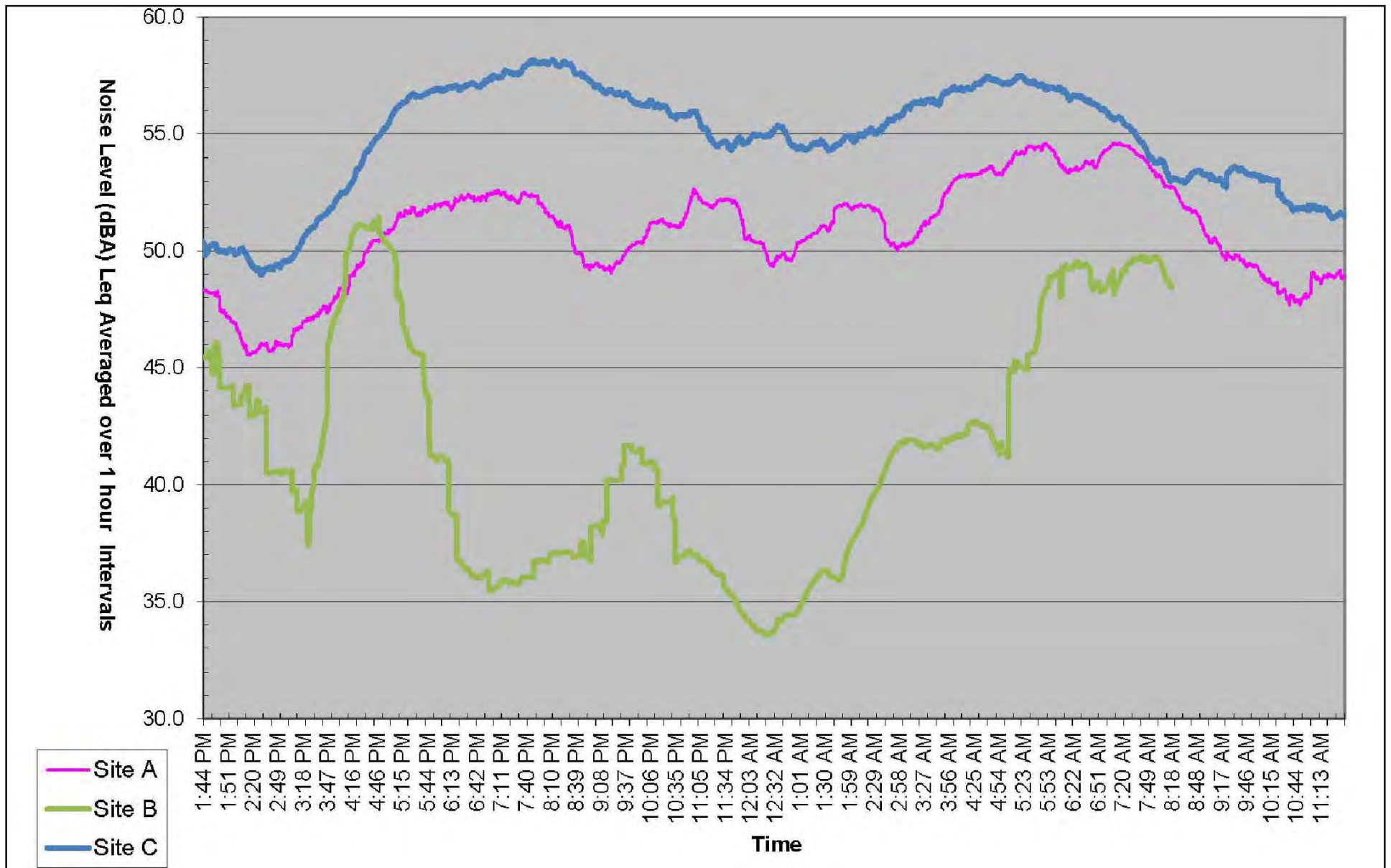
Table 3.10-4: Existing (Ambient) Long-Term Noise Level Measurements

Site	Site Description	Average (dBA L_{eq})	Maximum (dBA L_{max})	Minimum 1-Hour Interval (dBA $L_{eq}/Time$)	Maximum 1-Hour Interval (dBA $L_{eq}/Time$)	Average (dBA L_{dn})
A	Located southeast of the project site at the northern edge of Kit Fox RV Park and approximately 200 feet east of the centerline of Rogers Road	51.3	69.9	45.5/2:37 p.m.	54.6/6:10 a.m.	58.4
B	Located on the northern edge of the project site near the residence at 2337 Zacharias Road and approximately 70 feet south of the centerline of Zacharias Road.	44.6	74.0	33.6/12:41 a.m.	51.4/5:09 p.m.	50.0
C	Located at a non-operating diesel water pump on the western portion of the project site, approximately 200 feet southwest of the bridge over the California Aqueduct and 400 feet west of the centerline of I-5.	55.3	70.8	49.0/2:50 p.m.	58.2/8:10 p.m.	62.6
Notes: ¹ Site location shown on Exhibit 3.10-1. ² Noise measurements taken on December 5 and 6, 2011. Source: Michael Brandman Associates, 2012.						

The noise measurement results show that Sites A and B currently are within the City's exterior noise standards of 60 dBA L_{dn} for noise-sensitive residential areas, while Site C currently exceed the 60 dBA L_{dn} residential standard. The long-term noise monitoring data printouts are included in Appendix F.



Source: State of CA, NAIP 2010. MBA Field Survey and GIS Data, 2012.



Source: Exttech Model, 407780 Sound Level Meters.

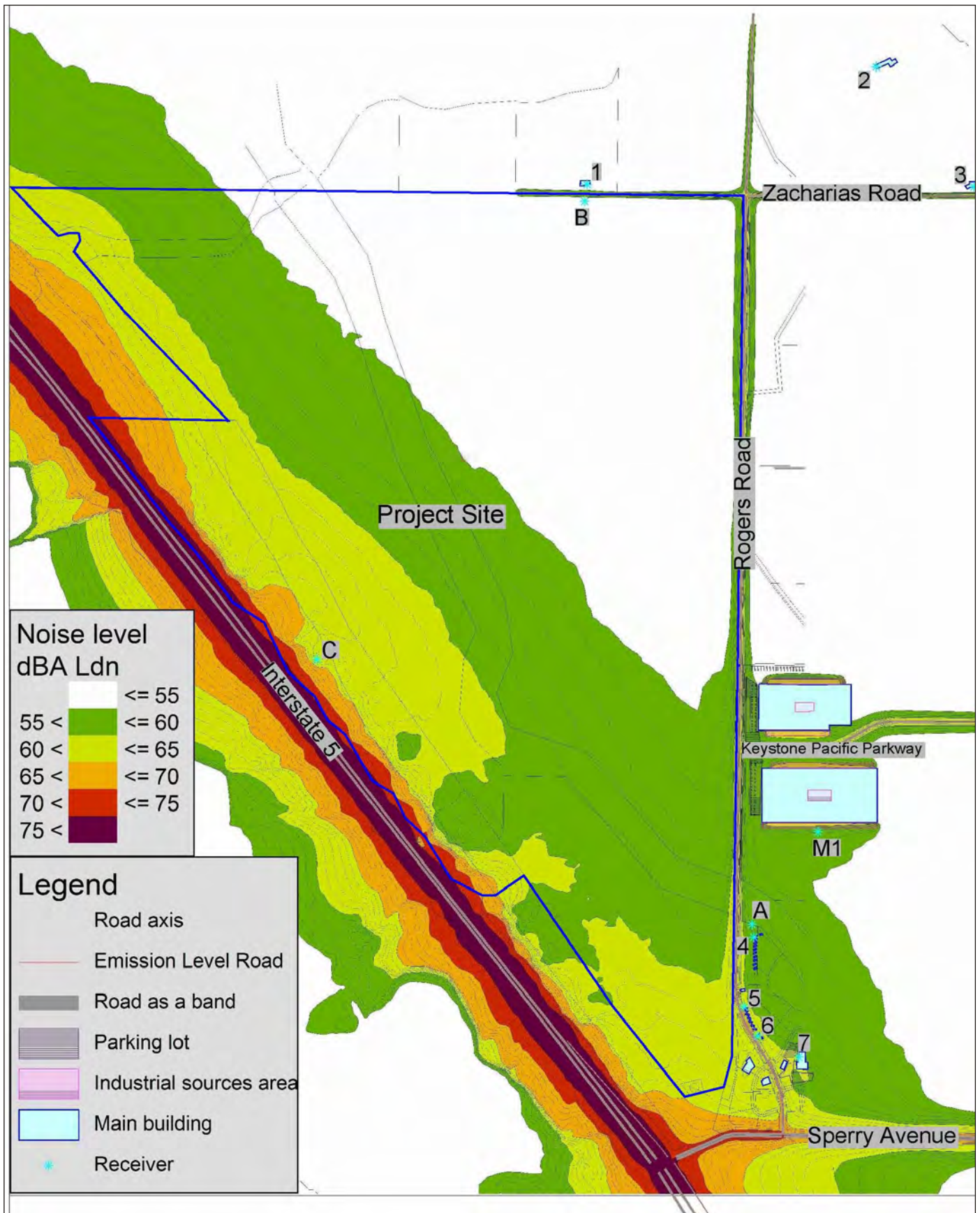


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Exhibit 3.10-2 Long-Term Noise Measurements Graph

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



Source: SoundPlan Version 7.1.



Michael Brandman Associates

Exhibit 3.10-3 Existing Noise Contour Map

Modeled Existing Noise Levels

The existing noise levels were modeled using the SoundPlan model, which is described in Section 3.10.4. Table 3.10-5 provides the SoundPlan-modeled noise levels at the façades of nearby sensitive receptors. The SoundPlan model was also used to produce a noise contour map showing the existing dBA L_{dn} in the project vicinity and is shown above in Exhibit 3.10-3. The SoundPlan Model printouts for the existing conditions are provided in Appendix F. Table 3.10-5 shows that only Receivers 5 and 6 exceed the City's 60-dBA L_{dn} exterior transient lodging standard.

Table 3.10-5: Existing Noise Levels at Nearby Sensitive Receptors

Receiver ¹	Description	dBA L_{dn} ²	dBA L_{eq} Day	dBA L_{eq} Night
1	Single-family home to the north	50	46	44
2	Single-family home to the northeast	44	39	38
3	Single-family home to the northeast	49	45	42
4	Recreational vehicle to the southeast	58	53	51
5	Recreational vehicle to the southeast	62	57	55
6	Recreational vehicle to the southeast	63	58	56
7	Hotel to the southeast	58	53	52
Notes: ¹ Location of Receivers shown on Exhibit 3.10-3. ² Noise level includes a 10-dBA penalty to account for the noise-sensitive nighttime hours. Source: SoundPlan Version 7.1; Michael Brandman Associates, 2012.				

Modeled Existing Roadway Noise Contours

The existing roadway noise contours were calculated utilizing the FHWA Traffic Noise Prediction Model FHWA-ROAD-77-108. The distances to the 55, 60, 65, and 70 dBA L_{dn} noise contours (as measured from roadway centerlines) were calculated, plus the noise level at the nearest sensitive receptor (residential, transient lodging, office, or park uses), which was determined from aerial photos of the study area. Table 3.10-6 shows the existing traffic noise contours.

Table 3.10-6: Existing Roadway Noise Contours

Roadway	Segment	L_{dn} at Nearest Receptor (dBA) ¹	Distance to Contour (feet)			
			70 dBA L_{dn}	65 dBA L_{dn}	60 dBA L_{dn}	55 dBA L_{dn}
Rogers Road	South of SR-33 ²	51	RW	RW	RW	RW
Rogers Road	North of Sperry Avenue ³	54	RW	RW	RW	48
Baldwin Road	South of SR-33 ²	45	RW	RW	RW	RW
Baldwin Road	North of Sperry Avenue ²	54	RW	RW	RW	57

Table 3.10-6 (cont.): Existing Roadway Noise Contours

Roadway	Segment	L _{dn} at Nearest Receptor (dBA) ¹	Distance to Contour (feet)			
			70 dBA L _{dn}	65 dBA L _{dn}	60 dBA L _{dn}	55 dBA L _{dn}
American Eagle Parkway	North of Sperry Avenue ²	58	RW	RW	32	68
Las Palmas Avenue	North of Sperry Avenue ²	56	RW	RW	34	74
Ward Avenue	North of American Eagle Parkway ²	61	RW	RW	58	125
Ward Avenue	North of Las Palmas Avenue ²	59	RW	RW	63	135
Ward Avenue	South of Sperry Avenue ²	60	RW	RW	41	88
Ward Avenue	South of Marshall Road ²	48	RW	RW	50	107
SR-33	North of Rogers Road ²	55	RW	58	124	267
SR-33	North of Baldwin Road ²	63	RW	58	125	269
SR-33	North of Zacharias Road ²	51	RW	53	115	247
SR-33	North of Ward Avenue ²	57	RW	RW	89	191
SR-33	North of Olive Avenue ²	56	RW	RW	58	125
SR-33	North of Walnut Avenue ²	60	RW	RW	65	139
SR-33	North of Las Palmas Avenue ⁴	61	RW	RW	57	122
SR-33	North of Sperry Avenue ⁵	62	RW	RW	71	153
SR-33	South of Sperry Avenue ²	59	RW	52	113	242
Sycamore Avenue	North of Olive Avenue ²	47	RW	RW	RW	RW
Sycamore Avenue	North of Walnut Avenue ²	44	RW	RW	RW	RW
Sycamore Avenue	North of Las Palmas Avenue ²	48	RW	RW	RW	39
Zacharias Road	West of Rogers Road ²	47	RW	RW	RW	RW
Zacharias Road	West of SR-33 ²	46	RW	RW	RW	RW
M Street	East of Ward Avenue ²	57	RW	RW	35	76
Walnut Avenue	East of SR-33 ²	53	RW	RW	RW	38
Walnut Avenue	East of Sycamore Avenue ²	46	RW	RW	RW	RW
Las Palmas Avenue	East of SR-33 ²	63	RW	RW	84	180
Las Palmas Avenue	East of Sycamore Avenue ²	61	RW	RW	77	166
Las Palmas Avenue	East of Poplar Avenue ²	61	RW	RW	81	175
Main Avenue	East of Carpenter Road ²	58	RW	RW	50	109
Sperry Avenue	East of Rogers Road ²	60	RW	RW	84	180

Table 3.10-6 (cont.): Existing Roadway Noise Contours

Roadway	Segment	L _{dn} at Nearest Receptor (dBA) ¹	Distance to Contour (feet)			
			70 dBA L _{dn}	65 dBA L _{dn}	60 dBA L _{dn}	55 dBA L _{dn}
Sperry Avenue	East of Baldwin Road ²	57	RW	RW	69	148
Sperry Avenue	East of Walker Ranch Parkway ²	57	RW	RW	55	119
Sperry Avenue	East of American Eagle Parkway ²	58	RW	RW	66	141
Sperry Avenue	East of Ward Avenue ²	60	RW	RW	65	140
Sperry Avenue	East of Del Puerto Avenue ²	59	RW	RW	RW	99
Notes: ¹ Distance to nearest sensitive receptors shown in Table 3.10-12. ² Nearest sensitive receptor is residential. ³ Nearest sensitive receptor is transient lodging. ⁴ Nearest sensitive receptor is a park. ⁵ Nearest sensitive receptor is office. RW = Noise contour is located within right-of-way of roadway. Source: FHWA Traffic Noise Prediction Model- FHWA-RD-77-108; Michael Brandman Associates, 2012.						

The calculated existing noise contours in Table 3.10-6 shows that the roadway segments of Ward Avenue north of American Eagle Parkway; SR-33 north of Baldwin Road, and Las Palmas Avenue from east of SR-33 to east of Poplar Avenue currently exceed the City's residential exterior noise standard of 60 dBA L_{dn}. The roadway segment of SR-33 south of Sperry Avenue currently exceeds the City's office exterior noise standard of 60 dBA L_{dn}. None of the roadway segments with adjacent transient lodging uses currently exceed the City's exterior transient lodging noise standard of 60 dBA L_{dn}, and none of the roadway segments with adjacent park uses currently exceed the City's exterior park standard of 70 dBA L_{dn}.

Patterson Airport

The Patterson Airport is located approximately 0.5 mile east of the project site. The airport is privately owned and supports small agricultural aircraft and, on occasion, small recreational aircraft. The Stanislaus County Airport Land Use Commission Plan does not establish any aviation noise contours for the Patterson Airport.

3.10.3 - Regulatory Framework

State

Office of Noise Control Standards

The California Office of Noise Control has set the land use compatibility noise standards and has encouraged local jurisdictions to adopt them. Pursuant to the land use compatibility noise standards, for commercial and industrial uses, noise levels up to 65 dBA CNEL are "normally acceptable;" noise levels between 65 and 75 dBA CNEL are "conditionally acceptable," which means that noise levels

are acceptable only when a detailed noise analysis is conducted, and needed noise-insulation features are included in the design. Conventional construction with closed windows and a fresh-air supply system or air conditioning will normally suffice as “acceptable noise insulation” features. Noise levels between 70 and 80 dBA CNEL are generally unacceptable, and development of land uses in noise environments that exceed 75 dBA CNEL are discouraged. For residential development and schools, exterior noise levels ranging up to 60 dBA CNEL are classified as “normally acceptable,” based upon the assumption that the homes are built with normal, conventional construction. Noise levels ranging from 55 to 70 dBA CNEL are conditionally acceptable. Noise levels in the 70- to 75-dBA CNEL range are classified as “generally unacceptable,” and new construction or development is discouraged but may proceed if a detailed noise analysis is conducted, and needed noise-insulation features are included in the design.

Caltrans Vibration Guidance

Construction vibration is regulated in accordance with standards established by the Transportation and Construction-Induced Vibration Guidance Manual, issued by the California Department of Transportation (Caltrans). Table 3.10-7 presents these standards. Transient sources create a single, isolated vibration event, such as blasting or drop-ball impacts. Continuous/frequent intermittent sources include multiple impacts from pile drivers, the use of vibratory compaction equipment, and other construction equipment that creates vibration other than in single events.

Table 3.10-7: Groundborne Vibration Exposure Standards

Structure and Condition	Maximum Peak Particle Velocity (inches/second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic building, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.20	0.10
Historic and older residential structures with plaster walls and ceilings	0.50	0.25
New residential structures with gypsum board walls and ceilings	1.00	0.50
Modern commercial and industrial buildings	2.00	0.50
Source: California Department of Transportation, 2004.		

Local

City of Patterson

General Plan

The City of Patterson General Plan sets forth the following goal and policies relevant to noise:

- **Goal HS-5:** To protect city residents from the harmful and undesirable effects of excessive noise.
- **Policy HS-5.1:** Noise levels resulting from non-transportation sources. New development of noise-sensitive uses shall not be allowed where the noise level due to non-transportation noise sources will exceed the noise level standards of Table HS-1, as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated into the development design to achieve the standards specified in Table HS-1.
- **Policy HS-5.2:** Noise levels resulting from non-transportation noise sources. Noise levels resulting from non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table HS-1 as measured immediately within the property line of lands designated for noise-sensitive uses. This policy does not apply to noise sources associated with agricultural operations on lands zoned for agricultural uses.
- **Policy HS-5.3:** Acoustical analysis required. Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table HS-1 at existing or planned noise-sensitive uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. (Requirements for the content of an acoustical analysis are identified in Table HS-2.) (Note: For the purposes of these noise policies, transportation noise sources are defined as traffic on public roadways, railroad line operations and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Other noise sources are presumed to be subject to local regulations, such as a noise control ordinance.)
- **Policy HS-5.4:** Noise standards. The feasibility of proposed projects with respect to existing and future transportation noise levels shall be evaluated by comparison to Figure HS-1.
- **Policy HS-5.5:** Noise sensitive land uses. New development of noise-sensitive land uses shall not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table HS-3, unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to the levels specified in Table HS-1.
- **Policy HS-5.6:** Transportation noise sources and mitigation. Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table HS-1 at outdoor activity areas or interior spaces of existing noise-sensitive land uses in either the incorporated or unincorporated areas.
- **Policy HS-5.7:** Acoustical analysis required. Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table HS-1 or the performance standards of Table HS-3, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.
- **Policy HS-5.8:** Minimize the use of noise barriers. Where noise mitigation measures are required to achieve the standards of Tables HS-1 and HS-3, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall only be

considered a supplemental means of achieving the noise standards after all practical design-related noise mitigation measures have been integrated into the project.

Municipal Code

The following City ordinances are applicable to the proposed project:

- **Chapter 9.26.010 Prohibition of unreasonable noise.**

- A. Notwithstanding any other provision of this chapter, and in addition thereto, it shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, intrusive, unnecessary, or unusual noise which disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.
- B. The standard which shall be considered in determining whether a violation of the provisions of this section exists shall include, but not be limited to, the following:
 - 1. The volume of the noise;
 - 2. The intensity of the noise;
 - 3. Whether the nature of the noise is usual or unusual;
 - 4. Whether the origin of the noise is natural or unnatural;
 - 5. The volume and intensity of the background noise or ambient noise, if any;
 - 6. The proximity of the noise to residential sleeping facilities or dwelling units;
 - 7. The nature and zoning of the area within which the noise emanates;
 - 8. The density of the inhabitation of the area within which the noise emanates;
 - 9. The time of the day or night the noise occurs;
 - 10. The duration of the noise;
 - 11. Whether the noise is recurrent, intermittent, or constant; and
 - 12. Whether the noise is produced by commercial or noncommercial activity (Ord. 437 § 6, 1989).

- **Chapter 6.44.090 Construction of buildings and projects.**

It shall be unlawful for any person within a residential zone, or within a radius of five hundred feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile drive, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other construction type device between the hours of ten p.m. of one day and seven a.m. of the next day in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a special permit authorizing exception to the above hours has been duly obtained from the officer or body of the City having the function to issue permits of this kind. No permit shall be required to perform emergency work as defined in Section 6.44.020 of this chapter (Ord. 437 § 11, 1989).

3.10.4 - Methodology

Michael Brandman Associates evaluated the proposed project's noise impacts through noise measurements and modeling of project noise impacts. The analysis is provided below.

Measurement Procedure and Criteria

To ascertain the existing noise at and adjacent to the project site, field monitoring was conducted on Monday, December 5, 2011 and Tuesday, December 6, 2011. The field survey noted that noise within the project study area is generally characterized by vehicle traffic on I-5 and the local roadways. The project applicant stated that December is typically the quietest time of the year, since no agriculture activity is occurring and none of the agriculture diesel water pumps are operating.

Patterson Airport is located approximately 2,000 feet east of the project site; however, no aircraft were observed landing or taking off at the airport. Small aircraft were observed flying at high altitude following the I-5 corridor.

Noise monitoring was performed using two different styles of noise meters for the short-term, peak-hour measurements and the long-term measurements, which are described below.

Short-Term Peak-Hour Noise Measurements

The short-term peak-hour noise measurements were taken using a Larson-Davis Model 824 Type 1 precision sound level meter programmed in "slow" mode to record noise levels in "A" weighted form as well as the frequency spectrum of the noise broken down into $\frac{1}{3}$ octaves. The sound level meter and microphone were mounted on a tripod 5 feet above the ground and were equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200. The accuracy of the calibrator is maintained through a program established through the manufacturer and is traceable to the National Bureau of Standards. The unit meets the requirements of American National Standards Institute Standard S1.4-1984 and IEC Standard 942: 1988 for Class 1 equipment. All noise level measurement equipment meets American National Standards Institute specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

All traffic noise measurement durations were measured according to the standards stated in Section N-3320 of Caltrans Technical Noise Supplement, which specifies that the measurements be a duration of at least 10 minutes and shall be continued past 10 minutes until the fluctuations in the displayed L_{eq} are less than 0.5 dBA.

Long-Term Noise Measurements

The long-term noise measurements were taken using three Extech Model 407780 Type 2 integrating sound level meters programmed in "slow" mode to record the sound pressure level at 3-second intervals for approximately 24 hours in "A" weighted form. In addition, the L_{eq} averaged over the entire measuring time and L_{max} were recorded. The sound level meters and microphones were

mounted on tripods 5 feet above the ground and were equipped with windscreens during all measurements. The sound level meters were calibrated before and after the monitoring using an Extech calibrator, Model 407766. All noise level measurement equipment meets American National Standards Institute specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

Noise Measurement Locations

The noise monitoring locations were selected by Michael Brandman Associates in order to obtain noise measurements of the current noise levels in the project study area and to provide a baseline for any potential noise impacts that may be created by development of the proposed project. The noise measurement sites were selected to provide a representative sampling of the noise levels experienced by nearby sensitive receptors. The sites are described in Table 3.10-3 and Table 3.10-4, and are shown in Exhibit 3.10-1. Appendix F includes a photo index of the study area and noise level measurement locations at the end of this section.

Noise Measurement Timing and Climate

The noise measurements were recorded between 12:52 p.m. on December 5, 2011 and 1:23 p.m. on December 6, 2011. When the long-term noise measurements were started on December 5, 2011, the sky was clear, the temperature was 56 degrees Fahrenheit (°F), barometric pressure was 29.95 inches of mercury, the humidity was 33 percent, and the wind was blowing around 2 miles per hour. The overnight temperature dropped to 29°F. At the start of the short-term noise measurements on December 6, 2011, the sky was clear, the temperature was 44°F, barometric pressure was 30.24 inches of mercury, the humidity was 44 percent, and the wind was blowing around 3 miles per hour. At the conclusion of the long-term noise measurements, the sky was clear, the temperature was 56°F, barometric pressure was 30.30 inches of mercury, the humidity was 36 percent, and there was no wind.

SoundPlan Noise Modeling Software

Since noise in the project vicinity is created by multiple roadways, parking lots, and stationary sources, the SoundPlan Version 7.1 noise modeling software was used. SoundPlan's road noise, parking lot noise, and stationary noise source algorithms are based on the FHWA Traffic Noise Model (FHWA TNM Model). The SoundPlan Model requires the input of roadways and the locations of the noise measurement receivers. Stationary noise sources with associated frequency spectrums, sound barriers, terrain contour lines, building placement, and specific ground coverage zones may be incorporated as well. The site plan and aerial photos were used to determine the placement of the roadways, parking lots, and stationary sources as well as to establish the terrain in the project vicinity. Since the study area is located in a rural environment and either agriculture uses or native vegetation exists along the sides of all analyzed roadways, loose soil conditions were used to develop noise contours and analyze noise impacts to the project study area. The default temperature and humidity, which can vary the propagation of noise, were used in the analysis and represent reasonable assumptions, since they are near the averages experienced in the project vicinity.

Existing Roadway Assumptions

The model analyzed the noise impacts from the nearby roadways onto the project vicinity, which consists of the area analyzed in the Traffic Impact Analysis. Except for I-5, where each direction of travel was analyzed separately, all other roadways were analyzed based on a single-lane-equivalent noise source combining both directions of travel. In order to convert the peak-hour traffic volumes provided in the Traffic Impact Analysis into average daily traffic (ADT) volumes, the AM and PM peak-hour volumes were added together and multiplied by 5. This is the same conversion procedure that was used in the Traffic Impact Analysis. The roadway parameters used for the SoundPlan modeling are presented in Table 3.10-8. The roadway classifications are based on the City of Patterson General Plan Circulation Element. The roadway speed is based on the posted speed limits.

Table 3.10-8: SoundPlan Model Existing Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (miles per hour)	Existing Average Daily Traffic Volumes
I-5	North of Sperry Avenue	Freeway	70/55	41,000
I-5	South of Sperry Avenue	Freeway	70/55	36,000
I-5 Northbound On-Ramp	North of Sperry Avenue	Freeway	55	3,250
I-5 Northbound Off-Ramp	South of Sperry Avenue	Freeway	55	780
Rogers Road	South of SR-33	Collector	35	610
Rogers Road	North of Sperry Avenue	Collector	25	4,860
Zacharias Road	West of Rogers Road	Collector	35	780
Zacharias Road	West of SR-33	Collector	35	780
Keystone Pacific Parkway ¹	East of Rogers Road	Collector	35	2,430
Sperry Avenue	West of Rogers Road	Arterial	45	7,990
Sperry Avenue	East of Rogers Road	Arterial	45	6,010
Note: ¹ The traffic volume on Keystone Pacific Parkway was estimated to equal 50 percent of Rogers Road north of Sperry Avenue. Source: TJKM, 2012; City of Patterson, 2004.				

Table 3.10-9 presents the hourly traffic flow distributions (vehicle mixes) used in this analysis. These distributions were obtained from Caltrans and from field observations of similar collector and arterial roads. The vehicle mix provides the hourly distribution percentages of automobiles, medium trucks, and heavy trucks for input into the FHWA and SoundPlan Models.

Table 3.10-9: Nearby Roadway Vehicle Mixes

Roadway Classification	Vehicle Type	Percent of Hourly Distribution			
		Day (7 a.m. to 7 p.m.)	Evening (7 p.m. to 10 p.m.)	Night (10 p.m. to 7 a.m.)	Overall
Local and Collector	Automobiles	73.6	13.6	10.2	97.4
	Medium Trucks	0.9	0.9	0.0	1.8
	Heavy Trucks	0.4	0.0	0.4	0.7
Arterials	Automobiles	69.5	12.9	9.6	92.0
	Medium Trucks	1.4	0.1	1.5	3.0
	Heavy Trucks	2.4	0.1	2.5	5.0
SR-33	Automobiles	62.6	12.8	15.0	90.5
	Medium Trucks	2.6	0.5	1.3	4.4
	Heavy Trucks	2.4	0.1	2.5	5.0
Interstate 5	Automobiles	52.1	10.7	12.5	75.2
	Medium Trucks	2.4	0.4	1.2	4.1
	Heavy Trucks	11.3	1.1	8.3	20.7
Source: California Department of Transportation, 2010; Michael Brandman Associates, 2012.					

In order to determine the height above the road grade from where the noise is being emitted, each type of vehicle has been analyzed independently with autos at road grade, medium trucks at 2.3 feet above road grade, and heavy trucks at 8 feet above road grade. These elevations were determined through a noise-weighted average of the elevation of the exhaust pipe, tires, and mechanical parts in the engine, which are the primary noise emitters from a vehicle.

Existing Truck Loading Areas

The SoundPlan model also analyzed the noise impacts from the truck loading areas adjacent to the two existing industrial buildings on the east side of Rogers Road. In order to determine the noise created from the truck loading areas, Field Noise Measurement M1 was taken approximately 20 feet from the southern truck loading area for the Grainger Industrial building located at 2710 Rogers Road. Noise Measurement M1 captured noise levels of 47.9 dBA L_{eq} and 67.0 dBA L_{max} . All four existing truck loading areas were modeled as area sources located 10 feet above ground level and were calibrated to the measured 47.9 dBA L_{eq} at 20 feet and operational 24 hour per day. The $\frac{1}{3}$ octave center frequency sound pressure levels from the reference noise measurement were inputted into the SoundPlan Model, in order for the Model to calculate the appropriate sound attenuation rates. The reference noise measurement was also cross-checked for pure tones, which found no pure tones were created during the noise measurement. The truck loading area source noise level, segmented into $\frac{1}{3}$ octaves, is provided in Appendix F.

Existing Parking Lot Assumptions

The existing parking lots at the two industrial buildings and at the commercial center southeast of the project were also analyzed in the SoundPlan model. The parking lot emission source is based on the different tonal contents typically created from parking lots and is primarily from engine and tire noise, slamming of doors, pedestrians, and street sweepers. The proposed parking lots were modeled on their estimated parking spaces from aerial photos, and 0.2 movement per space per hour during the daytime and 0.02 movement per space per hour during the nighttime, which was based on field observations of vehicle movements in the parking lots.

Existing Rooftop Mechanical Equipment Assumptions

The SoundPlan model also analyzed the noise impacts from the rooftop forced air units on the two existing industrial buildings on the east side of Rogers Road. The rooftop mechanical noise levels were calibrated to noise measurements of a rooftop unit on a similar existing building. The noise measurement was taken 10 feet from an operational rooftop unit, which measured a noise level of 59.5 dBA L_{eq} and 60.3 dBA L_{max} . The $\frac{1}{3}$ octave center frequency sound pressure levels from the reference noise measurement were inputted into the SoundPlan Model, in order for the Model to calculate the appropriate sound attenuation rates. The reference noise measurement was also cross-checked for pure tones, which found no pure tones were created during the noise measurement of the rooftop mechanical equipment. Each rooftop mechanical equipment unit was modeled for running 50 percent of each hour between the hours of 7 a.m. and 7 p.m. and 20 percent of each hour between 7 p.m. and 7 a.m., which was based on field observations during the reference noise measurement. Since access to these existing industrial buildings was not possible, each building was modeled with rooftop mechanical equipment covering 20 percent of the roof area. Each rooftop unit was modeled as an area source located 3 feet above the roof level and calibrated to a noise level of 59.5 dBA L_{eq} at 10 feet.

Modeling Calibration

Receivers were placed at the location of the noise measurement sites in order to assist in the calibration of the noise sources inputted into the model as well as to verify the accuracy of the SoundPlan Model. Table 3.10-10 and Table 3.10-11 provide a summary of the calculated results, and a comparison with the measured results shown above in Table 3.10-3 and Table 3.10-4, respectively.

Table 3.10-10: Model Calibration of Existing Short-Term Noise Levels

Site No.	Site Description	Calculated Daytime Noise Level ¹ (dBA L_{eq})	Measured Noise Level ² (dBA L_{eq})	Difference
M1	Located east of the project site, approximately 20 feet south of Grainger's southern truck loading area and approximately 800 feet east of Rogers Road.	50.7	47.9	2.8

Table 3.10-10 (cont.): Model Calibration of Existing Short-Term Noise Levels

Site No.	Site Description	Calculated Daytime Noise Level ¹ (dBA L _{eq})	Measured Noise Level ² (dBA L _{eq})	Difference
Notes: ¹ Noise level calculated from SoundPlan Version 7.1. ² Noise measurements taken on December 6, 2011. Source: Michael Brandman Associates, 2012.				

Table 3.10-11: Model Calibration of Existing Long-Term Noise Levels

Site No.	Site Description	Calculated Noise Level ¹ (dBA L _{dn})	Measured Noise Level ² (dBA L _{dn})	Difference
A	Located southeast of the project site at the northern edge of Kit Fox RV Park and approximately 200 feet east of the centerline of Rogers Road.	57.6	58.4	-0.8
B	Located on the northern edge of the project site near the residence at 2337 Zacharias Road and approximately 70 feet south of the centerline of Zacharias Road.	51.5	50.0	1.5
C	Located at a non-operating diesel water pump on the western portion of the project site, approximately 200 feet southwest of the bridge over the California Aqueduct and 400 feet west of the centerline of I-5.	63.2	62.6	0.6
Notes: ¹ Noise level calculated from SoundPlan Version 7.1. ² Noise measurements taken on December 5 and 6, 2011. Source: Michael Brandman Associates, 2012.				

Table 3.10-10 shows that the SoundPlan Model is within 2.8 dBA of the short-term noise measurement and is below the 3.0-dBA threshold of perception. Table 3.10-11 shows the model calibration accuracy to the long-term noise measurements and found that the model is within 1.5 dBA of the measured noise levels. Therefore, based on the field noise measurements, the SoundPlan Model provides an accurate representation of the project area noise levels.

FHWA-RD-77-108 Traffic Noise Prediction Model

To predict existing and future noise levels due to traffic traveling 25 miles per hour or above, a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-RD-77-108 was utilized. The FHWA-RD-77-108 Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level. Adjustments are then made to the reference energy mean emission level to account for the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway); the total average daily traffic (ADT) and the percentage of ADT that flows during the day, evening, and night; the travel speed; the vehicle mix on the roadway; a percentage of the volume of automobiles, medium trucks,

and heavy trucks; the roadway grade; the angle of view of the observer exposed to the roadway; and the site conditions (“hard” or “soft”) as they relate to the absorption of the ground, pavement, or landscaping.

Traffic Noise Prediction Model Inputs

The roadway parameters used for this study are presented in Table 3.10-12. The roadway classifications are based on the City of Patterson General Plan Circulation Element. The roadway speeds are based on the posted speed limits. The distance to the nearby sensitive receptor was determined by measuring the distance from the roadway centerline to the nearest residential, transient lodging, park or office uses. Since the study area is located in a rural environment and agriculture uses or landscaping exists along the sides of all analyzed roadways, soft site conditions were modeled.

Table 3.10-12: FHWA Model Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (miles per hour)	Distance to Sensitive Receptor (feet)
Rogers Road	South of SR-33 ¹	Collector	35	50
Rogers Road	North of Sperry Avenue ²	Collector	25	60
Baldwin Road	South of SR-33 ¹	Collector	35	90
Baldwin Road	North of Sperry Avenue ¹	Collector	35	70
American Eagle Parkway	North of Sperry Avenue ¹	Collector	35	40
Las Palmas Avenue	North of Sperry Avenue ¹	Collector	35	60
Ward Avenue	North of American Eagle Parkway ¹	Collector	45	50
Ward Avenue	North of Las Palmas Avenue ¹	Collector	45	70
Ward Avenue	South of Sperry Avenue ¹	Collector	45	40
Ward Avenue	South of Marshall Road ¹	Collector	45	320
SR-33	North of Rogers Road ¹	Arterial	55	250
SR-33	North of Baldwin Road ¹	Arterial	55	80
SR-33	North of Zacharias Road ¹	Arterial	45	450
SR-33	North of Ward Avenue ¹	Arterial	45	140
SR-33	North of Olive Avenue ¹	Arterial	40	100
SR-33	North of Walnut Avenue ¹	Arterial	40	60
SR-33	North of Las Palmas Avenue ³	Arterial	35	50
SR-33	North of Sperry Avenue ⁴	Arterial	35	50
SR-33	South of Sperry Avenue ¹	Arterial	45	140

Table 3.10-12 (cont.): FHWA Model Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (miles per hour)	Distance to Sensitive Receptor (feet)
Sycamore Avenue	North of Olive Avenue ¹	Collector	35	90
Sycamore Avenue	North of Walnut Avenue ¹	Collector	35	70
Sycamore Avenue	North of Las Palmas Avenue ¹	Collector	35	110
Zacharias Road	West of Rogers Road ¹	Collector	35	95
Zacharias Road	West of SR-33 ¹	Collector	35	100
M Street	East of Ward Avenue ¹	Collector	35	60
Walnut Avenue	East of SR-33 ¹	Local	25	50
Walnut Avenue	East of Sycamore Avenue ¹	Local	25	80
Las Palmas Avenue	East of SR-33 ¹	Arterial	35	50
Las Palmas Avenue	East of Sycamore Avenue ¹	Arterial	35	70
Las Palmas Avenue	East of Poplar Avenue ¹	Arterial	35	70
Main Avenue	East of Carpenter Road ¹	Arterial	35	70
Sperry Avenue	East of Rogers Road ¹	Arterial	45	90
Sperry Avenue	East of Baldwin Road ¹	Arterial	40	110
Sperry Avenue	East of Walker Ranch Parkway ¹	Arterial	35	90
Sperry Avenue	East of American Eagle Parkway ¹	Arterial	35	85
Sperry Avenue	East of Ward Avenue ¹	Arterial	35	60
Sperry Avenue	East of Del Puerto Avenue ¹	Arterial	35	50
Notes: ¹ Nearest sensitive receptor is residential. ² Nearest sensitive receptor is transient lodging. ³ Nearest sensitive receptor is a park. ⁴ Nearest sensitive receptor is office. Source: City of Paterson, 2004; Michael Brandman Associates, 2012.				

In order to determine the offsite project-generated traffic noise impacts, the average daily traffic volumes on the study area roadways were obtained from the Traffic Impact Analysis. The peak-hour volumes were provided for the existing year without and with phase 1 portion of project, and year 2035 without and with project scenarios. The ADT volumes were calculated by adding the AM and PM peak-hour volumes together and multiplying the result by 5. The calculated ADT volumes are shown in Table 3.10-13.

Table 3.10-13: Average Daily Traffic

Roadway	Segment	Average Daily Traffic			
		Existing		Year 2035	
		No Project	With Phase 1	No Project	With Project
Rogers Road	South of SR-33	610	3,430	9,020	11,910
Rogers Road	North of Sperry Avenue	4,860	15,760	12,370	22,790
Baldwin Road	South of SR-33	520	520	7,880	11,290
Baldwin Road	North of Sperry Avenue	2,400	2,400	6,850	9,480
American Eagle Parkway	North of Sperry Avenue	3,010	3,310	5,960	8,220
Las Palmas Avenue	North of Sperry Avenue	3,530	6,740	5,190	5,700
Ward Avenue	North of American Eagle Parkway	3,690	4,430	13,870	12,880
Ward Avenue	North of Las Palmas Avenue	4,250	4,590	8,210	6,890
Ward Avenue	South of Sperry Avenue	2,140	2,140	9,380	9,490
Ward Avenue	South of Marshall Road	3,080	3,080	13,900	17,590
SR-33	North of Rogers Road	5,600	8,420	21,570	21,140
SR-33	North of Baldwin Road	5,240	5,240	16,740	15,570
SR-33	North of Zacharias Road	8,580	8,580	12,400	15,200
SR-33	North of Ward Avenue	5,700	9,000	17,820	15,660
SR-33	North of Olive Avenue	4,000	6,540	10,980	9,970
SR-33	North of Walnut Avenue	4,250	6,790	13,260	11,840
SR-33	North of Las Palmas Avenue	4,570	8,000	15,170	15,140
SR-33	North of Sperry Avenue	6,410	7,120	11,720	11,770
SR-33	South of Sperry Avenue	8,160	9,270	16,230	17,210
Sycamore Avenue	North of Olive Avenue	810	1,440	13,380	13,970
Sycamore Avenue	North of Walnut Avenue	240	830	12,860	13,180
Sycamore Avenue	North of Las Palmas Avenue	1,400	2,020	13,630	13,110
Zacharias Road	West of Rogers Road	780	780	30,130	22,530
Zacharias Road	West of SR-33	780	4,720	15,330	16,830
M Street	East of Ward Avenue	3,680	3,660	5,350	5,030
Walnut Avenue	East of SR-33	3,410	3,420	6,670	6,740
Walnut Avenue	East of Sycamore Avenue	1,230	1,270	3,690	6,880
Las Palmas Avenue	East of SR-33	9,570	13,520	14,820	16,900

Table 3.10-13 (cont.): Average Daily Traffic

Roadway	Segment	Average Daily Traffic			
		Existing		Year 2035	
		No Project	With Phase 1	No Project	With Project
Las Palmas Avenue	East of Sycamore Avenue	9,570	14,130	15,950	12,600
Las Palmas Avenue	East of Poplar Avenue	10,360	14,960	17,340	17,550
Main Avenue	East of Carpenter Road	5,090	8,780	12,260	12,210
Sperry Avenue	East of Rogers Road	6,010	12,080	26,150	30,660
Sperry Avenue	East of Baldwin Road	6,200	10,870	19,200	21,260
Sperry Avenue	East of Walker Ranch Parkway	6,130	11,650	18,770	22,720
Sperry Avenue	East of American Eagle Parkway	7,830	12,220	16,060	19,960
Sperry Avenue	East of Ward Avenue	7,070	8,240	11,840	14,440
Sperry Avenue	East of Del Puerto Avenue	3,910	4,290	6,360	7,760
Source: TJKM, 2012; Michael Brandman Associates, 2012.					

The vehicle mixes used in the FHWA-RD-77-108 Model have been provided previously in Table 3.10-9.

Source Assumptions

To assess the roadway noise generation in a uniform manner, all vehicles were analyzed at the single-lane-equivalent acoustic center of the roadway being analyzed, which means that all lanes were analyzed as one lane located at the centerline of the roadway, instead of analyzing each lane in the roadway as a separate noise source. The width of each single-lane equivalent was based on the right-of-way and near-far lane lengths (i.e., the distance between the middle lines of each outside lane) as determined by the General Plan Roadway Classification. In order to determine the height above the road grade from where the noise is being emitted, each type of vehicle has been analyzed independently with autos at road grade, medium trucks at 2.3 feet above road grade, and heavy trucks at 8 feet above road grade. These elevations were determined through a noise-weighted average of the elevation of the exhaust pipe, tires, and mechanical parts in the engine, which are the primary noise emitters from a vehicle.

Non-Transportation Noise Impacts

In order to determine the proposed project impacts onto the nearby sensitive receptors, the proposed project's non-transportation noise only scenario was analyzed using the SoundPlan model. The analysis has been based on the SoundPlan modeling methodology presented above for the existing scenario. The following describes the input parameters of the SoundPlan model under the proposed

project that were modified from the existing scenario for the non-transportation noise only scenario. The following describes the anticipated non-transportation noise sources that would occur during the ongoing operations of the proposed project.

With Project Onsite Roadway Assumptions

The onsite roads located on the project site have been analyzed as stationary noise sources, since the roads are located on private property and thus are not exempt from local noise regulations. Since the Traffic Impact Analysis did not provide traffic volume for any of the onsite roads, the roads that would provide a connection to other onsite roads and to offsite roads were analyzed based on 4,000 trips per day with a speed of 35 miles per hour, and all other roads were analyzed based on 2,000 trips per day with a speed of 25 miles per hour.

The hourly traffic flow distributions (vehicle mixes) used for the onsite roadways have been based on the collector vehicle mix that was provided previously in Table 3.10-9. In order to determine the height above the road grade from where the noise is being emitted, each type of vehicle has been analyzed independently with autos at road grade, medium trucks at 2.3 feet above road grade, and heavy trucks at 8 feet above road grade. These elevations were determined through a noise-weighted average of the elevation of the exhaust pipe, tires, and mechanical parts in the engine, which are the primary noise emitters from a vehicle.

With Project Parking Lot Assumptions

The SoundPlan model also analyzed the noise impacts from the proposed parking lots. The parking lot emission source is based on the different tonal contents typically created from parking lots and is primarily from engine and tire noise, slamming of doors, pedestrians, and street sweepers. The proposed parking lots were modeled based on the same modeling parameters used for the existing modeled parking lots of 0.2 movement per space per hour during the daytime and 0.02 movement per space per hour during the nighttime.

In order to determine the maximum noise created by parking lots a 24-hour noise measurement was taken at a shopping center in Fresno, which measured a maximum noise level of 86.9 dBA L_{max} . The maximum noise level was most likely created during street sweeper operations.

With Project Rooftop Mechanical Equipment Assumptions

The SoundPlan model also analyzed the noise impacts from the proposed rooftop mechanical equipment. The proposed rooftop mechanical equipment were modeled based on the same modeling parameters used for the existing modeled rooftop equipment of each unit was modeled for running 50 percent of each hour between the hours of 7 a.m. and 7 p.m. and 20 percent of each hour between 7 p.m. and 7 a.m. Each proposed structure was modeled with rooftop mechanical equipment covering 20 percent of the roof area. Each rooftop unit was modeled as an area source located 3 feet above the roof level and calibrated to a noise level of 59.5 dBA L_{eq} at 10 feet. The maximum noise analysis

from the rooftop mechanical equipment has been based on the reference noise measurement, which captured a maximum noise of 60.3 dBA L_{max} .

With Project Truck Loading Areas

The SoundPlan model also analyzed the noise impacts from the proposed truck loading areas. Each proposed truck loading area was modeled based on the same modeling parameters used for the existing modeled truck loading areas that were modeled as area sources located 10 feet above ground level and was calibrated to the measured 47.9 dBA L_{eq} at 20 feet and operational 24 hour per day. The maximum noise analysis for the truck loading areas has been based on Noise Measurement M1, which captured a maximum noise level of 67.0 dBA L_{max} .

Combined Transportation and Stationary Noise Impacts

In order to determine the combined stationary and transportation noise impacts created by the proposed project, the SoundPlan Model modeling software was utilized. The following describes the input parameters of the SoundPlan model that were modified from the existing and stationary only scenarios for the combined transportation and stationary noise scenario.

Roadway Assumptions

The roadways that were analyzed in the existing scenario have been analyzed in the SoundPlan Model for the existing year without and with phase 1 of project scenarios and year 2035 without and with project scenarios. The roadways analyzed in the SoundPlan model are the same as what was analyzed in the existing conditions shown above in Table 3.10-8. The parameters used in the analysis are shown in Table 3.10-14 for the existing and year 2035 conditions.

Table 3.10-14: Combined Transportation and Stationary Conditions Roadway Parameters

Roadway	Segment	Average Daily Traffic Volumes			
		Existing No Project	Existing With Phase 1	Year 2035 No Project	Year 2035 With Project
I-5	North of Sperry Avenue	41,000	42,700	59,200	61,800
I-5	South of Sperry Avenue	36,000	41,300	55,900	61,300
I-5 Northbound On-Ramp	North of Sperry Avenue	3,250	3,680	8,050	6,330
I-5 Northbound Off-Ramp	South of Sperry Avenue	780	3,450	6,100	7,300
Rogers Road	South of SR-33	610	3,430	9,020	11,910
Rogers Road	North of Sperry Avenue	4,860	15,760	12,370	22,790
Zacharias Road	West of Rogers Road	780	780	30,130	22,530
Zacharias Road	West of SR-33	780	4,720	15,330	16,830

Table 3.10-14 (cont.): Combined Transportation and Stationary Conditions Roadway Parameters

Roadway	Segment	Average Daily Traffic Volumes			
		Existing No Project	Existing With Phase 1	Year 2035 No Project	Year 2035 With Project
Keystone Pacific Parkway	East of Rogers Road	2,430	3,800	6,190	10,600
Sperry Avenue	West of Rogers Road	7,990	13,380	26,910	29,290
Sperry Avenue	East of Rogers Road	6,010	12,080	26,150	30,660
Source: TJKM, 2012; Michael Brandman Associates, 2012.					

The hourly traffic flow distributions (vehicle mixes) used in this analysis have been provided above in Table 3.10-9, and the roadways were assigned the same vehicle mixes used for the existing.

In order to determine the height above the road grade from where the noise is being emitted, each type of vehicle has been analyzed independently with autos at road grade, medium trucks at 2.3 feet above road grade, and heavy trucks at 8 feet above road grade. These elevations were determined through a noise-weighted average of the elevation of the exhaust pipe, tires, and mechanical parts in the engine, which are the primary noise emitters from a vehicle.

3.10.5 - Thresholds of Significance

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

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

- f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The City of Patterson General Plan Policy VII.E.6 provides an appropriate threshold for transportation sources. For noise generated by new transportation sources, the policy limits the noise levels to 60 dBA L_{dn} for the outdoor activity areas and 45 dB L_{dn} for the interior spaces for the nearby residential, transient lodge, and office uses. Since structures typically provide at least 15 dB of exterior to interior attenuation, this analysis has been limited to the exterior noise thresholds, since it is not possible for a significant interior noise impact to occur without a significant exterior noise impact. For the nearby parks, Policy VII.E.6 limits the noise level to 70 dB L_{dn} for the outdoor activity areas.

Where the no project condition already exceeds the City's 60-dBA L_{dn} threshold, the CEQA Guidelines and the City's General Plan provide no definition of what constitutes a substantial noise increase. However, the California Department of Transportation provides guidance that can be used to define substantial changes in noise levels that may be caused by a project. The thresholds below apply to transportation noise that is usually expressed in terms of average noise exposure during a 24-hour period, such as the L_{dn} or CNEL. Project-generated increases in noise levels that exceed those outlined in the thresholds below, and that affect existing noise-sensitive land uses (receptors) are considered substantial and, therefore, would constitute a significant noise impact. The project would create a significant transportation-related noise if it would:

- Increase noise levels by 3 dB or more where the without project noise level is 60 to 65 dB.
- Increase noise levels by 1.5 dB or more where the without project noise level is greater than 65 dB.

For non-transportation, or stationary source, noise, the City of Patterson General Plan Policy VII.E.2 limits levels at nearby noise sensitive receptors to 50 dB L_{eq} and 70 dB L_{max} during the daytime (7 a.m. to 10 p.m.) and 45 dB L_{eq} and 65 dB L_{max} during the nighttime (10 p.m. to 7 a.m.).

The vibration impact thresholds were based on Caltrans thresholds presented in its Transportation- and Construction-Induced Vibration Guidance Manual. The report recommends a threshold of 0.04-inch-per-second PPV as the significance level for continuous events, which has been used to assess construction activities. The report also recommend a threshold of 0.25-inch-per-second PPV as the significance level for transient sources, which has been used to assess operations-related activities since the primary vibration source would be from the operation of trucks.

Pursuant to Chapter 6.44.090 of the City's Municipal Code, construction noise is restricted from occurring between 10 p.m. and 7 a.m., daily. Since some construction activities could result in noise levels that could cause harm to persons such as residents or workers, a noise threshold utilizing the OSHA agency limits of noise exposure is used. The use of a significance threshold using an OSHA standard is considered conservative. The OSHA standard is limiting noise exposure of workers to 90

dB or less over 8 continuous hours. Typical construction activities result in a range of noise levels from operating various pieces of equipment. Typical equipment operating cycles may be used at a full power setting followed by a lower setting. Therefore, noise levels fluctuate during construction activities. For the purpose of this noise impact analysis, noise levels that could expose residents or workers to more than 90 dB for over 8 continuous hours is considered a significant noise impact.

3.10.6 - Project Impacts and Mitigation Measures

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

Construction Noise

Impact NOI-1:	Construction activities associated with the proposed project may expose nearby land uses to excessive noise levels.

Impact Analysis

This impact addresses checklist items a) and d). Construction noise represents a short-term increase in ambient noise levels. Noise impacts from construction activities would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

A construction-related noise impact would be considered significant if construction activities are undertaken between the hours of 10:00 p.m. and 7:00 a.m. Construction activities that occur between 7:00 a.m. and 10 p.m. would also be considered significant if construction noise levels exceed 90 dBA at any nearby sensitive receptor.

West Patterson Business Park Expansion Project

Short-term noise impacts could occur during construction activities of the proposed project from either the noise impacts created from the transport of workers and movement of construction materials to and from the project site, or from the noise generated onsite during demolition and ground clearing/excavation, grading, and building and road construction activities. According to Section 3.3, Air Quality and Greenhouse Gases, the proposed project would be built in four phases and the grading portion of each phase would have the greatest amount of simultaneously operating heavy equipment, which would consist of one grader, one dozer, one water truck, and two of either a tractor, loader or backhoe.

Construction noise impacts to the nearby sensitive receptors have been calculated with the SoundPlan Model based on the simultaneous operation of the grading equipment listed above and according to the equipment noise levels listed in Table 3.10-1. Because of the size of the project site, where construction noise would not have an impact on the other side of the site, the SoundPlan model was run with two phases of grading operations occurring simultaneously. One phase was based on occurring along the northeastern portion of the project site and the other in the southeastern portion of the project, which represent the nearest locations to the offsite sensitive receptors. All equipment was

modeled based on running 8 hours per day between 7 a.m. and 3 p.m., which are typical construction work hours. The grading equipment was modeled as point sources 8 feet above ground elevation. All other parameters in the SoundPlan model were the same as used for the existing conditions. A summary of the results of the noise impacts associated with the construction of the proposed project is shown in Table 3.10-15.

Table 3.10-15: West Patterson Business Park Construction Noise Impacts at Nearby Receptors

Receiver ¹	Description	Existing dBA L _{eq} Day	Existing Plus Construction dBA L _{eq} Day	Increase Over Existing
1	Single-family home to the north	46	64	18
2	Single-family home to the northeast	39	44	5
3	Single-family home to the northeast	45	45	0
4	Recreational vehicle to the southeast	53	63	10
5	Recreational vehicle to the southeast	57	64	7
6	Recreational vehicle to the southeast	58	60	2
7	Hotel to the southeast	55	57	2
Note: ¹ Location of Receivers shown on Exhibit 3.10-3. Source: SoundPlan Version 7.1; Michael Brandman Associates, 2012.				

Table 3.10-15 shows that the single-family home represented by Receiver 1 and the recreational vehicle represented by Receiver 5 would experience the highest noise levels during construction of the proposed project, with a noise level of 64 dBA L_{eq} during the daytime. The proposed onsite construction activities would not generate noise levels above the 90-dB standard described above at any of the nearby sensitive receptors. Therefore, with compliance of the limitation in construction hours detailed in the Municipal Code, a less than significant noise impact would occur from the proposed project's construction activities.

Offsite Utility Alignments

Development of the proposed project would require the extension and expansion of offsite utilities to the proposed project. The water, electricity and natural gas lines already exist in the immediate vicinity of the project site. However, a sewer line of adequate size would have to be constructed between the project site and the existing sewer line located within Sperry Avenue. Three alternative alignments for the proposed sewer line have been proposed in Section 2, Project Description and are summarized below:

1. Begins at Rogers Road/Rogers Court and follows Rogers Road to manhole located within Sperry Avenue.

2. Begins at Rogers Road/Delta-Mendota Canal and follows the east side of the canal to a manhole within Sperry Avenue.
3. Begins at Rogers Road/Lateral 6 South and follows the lateral to a point south of Keystone Pacific Parkway. At this point, the alignment follows a planned (but unbuilt) roadway south through the current Patterson Airport to a manhole within Sperry Avenue.

Alternative 1 presumes construction activities would occur as near as 50 feet from sensitive receptors, Alternative 2 presumes construction activities would occur as near as 220 feet from sensitive receptors, and Alternative 3 presumes construction activities would occur as near as 1,200 feet from sensitive receptors. Therefore, construction activities at Alternative 1 would have the potential to create the greatest noise impacts at nearby sensitive receptors and has been analyzed below.

According to Section 3.3, Air Quality and Greenhouse Gas Emissions, the asphalt paving portion of the offsite sewer line extension would have the greatest amount of simultaneously operating heavy equipment, which would consist of four cement and mortar mixers, one paver, one roller, and one of either a tractor, loader or backhoe. Construction noise impacts to the nearby sensitive receptors have been calculated with the SoundPlan Model based on the simultaneous operation of the asphalt paving equipment listed above and according to the equipment noise levels listed in Table 3.10-1. All equipment was modeled based on running 8 hours per day between 7 a.m. and 3 p.m., which is typical construction work hours. The asphalt paving equipment was modeled as point sources 8 feet above ground elevation. All other parameters in the SoundPlan model were the same as used for the existing conditions. A summary of the results of the noise impacts associated with the construction of the proposed project is shown in Table 3.10-16.

Table 3.10-16: Offsite Utilities Construction Noise Impacts at Nearby Receptors

Receiver ¹	Description	Existing dBA L _{eq} Day	Existing Plus Construction dBA L _{eq} Day	Increase Over Existing
1	Single-family home to the north	46	46	0
2	Single-family home to the northeast	39	39	0
3	Single-family home to the northeast	45	45	0
4	Recreational vehicle to the southeast	53	54	1
5	Recreational vehicle to the southeast	57	68	11
6	Recreational vehicle to the southeast	58	71	13
7	Hotel to the southeast	55	59	4
Note: ¹ Location of Receivers shown on Exhibit 3.10-3. Source: SoundPlan Version 7.1; Michael Brandman Associates, 2012.				

Table 3.10-16 shows that the recreational vehicle represented by Receiver 6 would experience the highest noise levels during construction of the offsite utilities, with a noise level of 71 dBA L_{eq} during the daytime. The proposed onsite construction activities would not generate noise levels above the 90 dB standard described above at any of the nearby sensitive receptors. Therefore, with compliance of the limitation in construction hours detailed in the Municipal Code, a less than significant noise impact would occur from the offsite utilities construction activities.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Groundborne Vibration

Impact NOI-2:	Construction and operational activities associated with the proposed project would not generate substantial groundborne vibration.

Impact Analysis

This impact addresses checklist item b.), which includes construction and operational vibration impacts associated the proposed project. The construction and operational vibration impacts from the proposed project and offsite utilities have been analyzed separately below.

*West Patterson Business Park Expansion Project**Construction Vibration*

Construction activities can produce vibration that may be felt by adjacent uses. The primary sources of vibration during construction would be from bulldozers and graders. From Table 3.10-2, a large bulldozer would produce the largest amount of equipment-related vibration on the project site: 0.089-inch-per-second PPV at 25 feet.

The closest vibration-sensitive land uses is a single-family home located approximately 120 feet to the north of the proposed business park expansion. It is anticipated that the vibration levels caused by a large bulldozer operating on the edge of the area to be disturbed during construction of the business park at the nearest structure (120 feet away) will be around 0.016-inch-per-second PPV, and other sensitive land uses located further away would experience even lower vibration levels. This vibration level would not exceed the 0.25-inch-per-second significance threshold for continuous events, near older structures during construction activities. This impact would be less than significant.

Operational Vibration

The proposed project would result in an increase in frequency of tractor trailer truck deliveries to the project site. These additional truck trips would operate as near as 25 feet from the existing RV Park located east of Rogers Road.

From Table 3.10-2, a loaded truck would typically produce a vibration level of 0.076-inch-per-second PPV at 25 feet. This vibration level would not exceed the 0.25-inch-per-second PPV transient source threshold. Therefore, vibration impacts from the ongoing operations of the proposed project would be less than significant.

Offsite Utility Alignments

Construction Vibration

Construction activities can produce vibration that may be felt by adjacent uses. The primary sources of vibration during construction would be from bulldozers and graders. From Table 3.10-2, a large bulldozer would produce the largest amount of equipment-related vibration on the project site: 0.089-inch-per-second PPV at 25 feet.

The closest vibration-sensitive land uses is an RV Park located as near as 50 feet to the east of the proposed improvements. It is anticipated that the vibration levels caused by a large bulldozer operating on the edge of the area to be disturbed during construction of the offsite utilities at the nearest structure (50 feet away) will be around 0.042-inch-per-second PPV, and other sensitive land uses located further away would experience even lower vibration levels. This vibration level would not exceed the 0.25-inch-per-second significance threshold for continuous events, near older structures during construction activities. This impact would be less than significant.

Operational Vibration

No sources of vibration are anticipated with the ongoing operations of the offsite utilities. Therefore, no offsite utility operational vibration impacts are anticipated.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Roadway Noise

Impact NOI-3: **The proposed project's vehicular trips would not cause a substantial permanent increase in ambient noise levels.**

Impact Analysis

This impact addresses checklist items a) and c). The proposed project would generate additional vehicular trips on roadways in the project vicinity. Noise from motor vehicles is generated by engine vibrations, the interaction between tires and the road, and the exhaust system.

In order for offsite roadway noise impacts created by the proposed project's operations to be considered potentially significant, the proposed project would need to increase the noise levels above 60 dBA L_{dn} for the outdoor activity areas of the nearby residential, transient lodge, and office uses and 70 dB L_{dn} for the outdoor activity areas of any nearby parks. For the land uses along Sperry Avenue between Rogers Road and Baldwin Avenue—which currently contain agricultural and rural residential land use activities but are designated for light industrial use by the City of Patterson General Plan and Zoning Ordinance—70 dB L_{dn} is the standard used for outdoor activity areas, since this represents the “conditionally acceptable” limit for residential uses and “normally acceptable” limit for industrial uses. Where without project noise exceeds the outdoor activity area threshold, a significant impact would occur where the project would lead to an increase at a noise-sensitive land use by 3.0 dBA—where the without project noise level is between 60 and 65 dBA L_{dn} , or 1.5 dBA L_{dn} —where the without-project noise level is greater than 65 dBA L_{dn} .

West Patterson Business Park Expansion Project

In order to quantify the traffic noise impacts along the analyzed roadways, the roadway noise contours were calculated. Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway. For analysis comparison purposes, the L_{dn} and CNEL noise levels are calculated at the distance to the nearest sensitive receptor (residential or commercial and office uses), which was determined from aerial photos of the study area. In addition, the distance from the centerline to the 55-, 60-, 65-, and 70-dBA noise levels are calculated for both L_{dn} and CNEL standards and are shown in the noise calculation spreadsheets provided in Appendix F. The proposed project's offsite traffic noise impacts have been analyzed for the existing and year 2035 conditions and are discussed below.

Existing Conditions

The proposed project's potential offsite traffic noise impacts have been calculated through a comparison between the existing without-project scenario and the existing with phase 1 of the project scenario. The results of this comparison are shown in Table 3.10-17.

Table 3.10-17: Existing Project Traffic Noise Contributions

Roadway	Segment	dBA L _{dn} at Nearest Receptor ¹			
		No Project	With Phase 1	Project Contribution	Potential Significant Impact?
Rogers Road	South of SR-33 ²	51	58	7	No
Rogers Road	North of Sperry Avenue ³	54	59	5	No
Baldwin Road	South of SR-33 ²	45	45	0	No
Baldwin Road	North of Sperry Avenue ²	54	54	0	No
American Eagle Parkway	North of Sperry Avenue ²	59	59	0	No
Las Palmas Avenue	North of Sperry Avenue ²	56	59	3	No
Ward Avenue	North of American Eagle Parkway ²	61	62	1	No
Ward Avenue	North of Las Palmas Avenue ²	59	60	1	No
Ward Avenue	South of Sperry Avenue ²	60	60	0	No
Ward Avenue	South of Marshall Road ²	48	48	0	No
SR-33	North of Rogers Road ²	55	57	2	No
SR-33	North of Baldwin Road ²	63	63	0	No
SR-33	North of Zacharias Road ²	51	51	0	No
SR-33	North of Ward Avenue ²	57	59	2	No
SR-33	North of Olive Avenue ²	56	59	3	No
SR-33	North of Walnut Avenue ²	61	63	2	No
SR-33	North of Las Palmas Avenue ⁴	61	63	2	No
SR-33	North of Sperry Avenue ⁵	62	63	1	No
SR-33	South of Sperry Avenue ²	59	59	0	No
Sycamore Avenue	North of Olive Avenue ²	47	50	3	No
Sycamore Avenue	North of Walnut Avenue ²	44	49	5	No
Sycamore Avenue	North of Las Palmas Avenue ²	48	50	2	No
Zacharias Road	West of Rogers Road ²	47	47	0	No
Zacharias Road	West of SR-33 ²	46	54	8	No
M Street	East of Ward Avenue ²	57	57	0	No
Walnut Avenue	East of SR-33 ²	53	53	0	No
Walnut Avenue	East of Sycamore Avenue ²	46	46	0	No
Las Palmas Avenue	East of SR-33 ²	63	65	2	No
Las Palmas Avenue	East of Sycamore Avenue ²	61	62	1	No

Table 3.10-17 (cont.): Existing Project Traffic Noise Contributions

Roadway	Segment	dBA L _{dn} at Nearest Receptor ¹			
		No Project	With Phase 1	Project Contribution	Potential Significant Impact?
Las Palmas Avenue	East of Poplar Avenue ²	61	63	2	No
Main Avenue	East of Carpenter Road ²	58	60	2	No
Sperry Avenue	East of Rogers Road ²	60	63	3	Yes
Sperry Avenue	East of Baldwin Road ²	57	59	2	No
Sperry Avenue	East of Walker Ranch Parkway ²	57	60	3	No
Sperry Avenue	East of American Eagle Parkway ²	58	60	2	No
Sperry Avenue	East of Ward Avenue ²	61	61	0	No
Sperry Avenue	East of Del Puerto Avenue ²	60	60	0	No
Notes: ¹ Distance to nearest sensitive receptors shown in Table 3.10-12. ² Nearest sensitive receptor is residential. ³ Nearest sensitive receptor is transient lodging. ⁴ Nearest sensitive receptor is a park. ⁵ Nearest sensitive receptor is office. Source: Michael Brandman Associates, 2012.					

Table 3.10-17 above shows that compared with existing conditions, noise level contributions from Phase 1 of the proposed project to the study area roadways would range from 0 to 8 dBA L_{dn}. In this scenario, only the roadway segment of Sperry Avenue east of Rogers Road would exceed the City's normally acceptable residential noise standard of 60 dBA L_{dn} when compared with existing without project conditions.

There are two existing rural residences on the north side of Sperry Avenue between Rogers Road and Baldwin Road. The land where these residences are located is designated "Light Industrial" by the City of Patterson General Plan and zoned "West Patterson Light Industrial" by the Patterson Zoning Ordinance. Because these rural residences predated annexation into the City of Patterson, they are considered "legal, non-conforming" land uses. Given the amount of development that has occurred in the nearby West Patterson Business Park since 2003, it would be expected that these rural residential land uses would ultimately transition to light industrial uses by 2023, the buildout horizon of Phase I. As such, using 70-dBA L_{dn} as the exterior noise exposure standard for these uses is the appropriate threshold because it represents both the "conditionally acceptable" standard for residential uses and the "normally acceptable" standard for industrial uses. When the 70-dB L_{dn} standard is utilized, the proposed project would not cause an exceedance of the noise standards along this roadway segment.

Of the roadway segments with nearby residential uses that exceed 60 dBA L_{dn} for the without project conditions, the project contribution to these roadway segments would not exceed the 3 dB or greater increase threshold. No roadway segments currently exceed 65 dBA L_{dn} so the 1.5 dB increase threshold does not apply to this scenario.

In addition, none of the roadway segments with adjacent transient lodging or office uses would exceed the City's exterior standard of 60 dBA L_{dn} , and none of the roadway segments with adjacent park uses would exceed the City's exterior standard of 70 dBA L_{dn} .

Year 2035 Conditions

The proposed project's potential offsite traffic noise impacts have been calculated through a comparison between the year 2035 without-project scenario and the year 2035 with project scenario. The results of this comparison are shown in Table 3.10-18.

Table 3.10-18: Year 2035 Project Traffic Noise Contributions

Roadway	Segment	dBA L_{dn} at Nearest Receptor ¹			
		No Project	With Project	Project Contribution	Potential Significant Impact?
Rogers Road	South of SR-33 ²	62	64	2	No
Rogers Road	North of Sperry Avenue ³	58	60	2	No
Baldwin Road	South of SR-33 ²	57	59	2	No
Baldwin Road	North of Sperry Avenue ²	58	60	2	No
American Eagle Parkway	North of Sperry Avenue ²	62	63	1	No
Las Palmas Avenue	North of Sperry Avenue ²	58	58	0	No
Ward Avenue	North of American Eagle Parkway ²	67	66	-1	No
Ward Avenue	North of Las Palmas Avenue ²	62	61	-1	No
Ward Avenue	South of Sperry Avenue ²	67	67	0	No
Ward Avenue	South of Marshall Road ²	54	55	1	No
SR-33	North of Rogers Road ²	61	61	0	No
SR-33	North of Baldwin Road ²	68	68	0	No
SR-33	North of Zacharias Road ²	53	54	1	No
SR-33	North of Ward Avenue ²	62	61	-1	No
SR-33	North of Olive Avenue ²	61	60	-1	No
SR-33	North of Walnut Avenue ²	65	65	0	No
SR-33	North of Las Palmas Avenue ⁴	66	66	1	No

Table 3.10-18 (cont.): Year 2035 Project Traffic Noise Contributions

Roadway	Segment	dBA L _{dn} at Nearest Receptor ¹			
		No Project	With Project	Project Contribution	Potential Significant Impact?
SR-33	North of Sperry Avenue ⁵	65	65	0	No
SR-33	South of Sperry Avenue ²	62	62	0	No
Sycamore Avenue	North of Olive Avenue ²	59	60	1	No
Sycamore Avenue	North of Walnut Avenue ²	61	61	0	No
Sycamore Avenue	North of Las Palmas Avenue ²	58	58	0	No
Zacharias Road	West of Rogers Road ²	63	61	-2	No
Zacharias Road	West of SR-33 ²	59	60	1	No
M Street	East of Ward Avenue ²	58	58	0	No
Walnut Avenue	East of SR-33 ²	56	56	0	No
Walnut Avenue	East of Sycamore Avenue ²	50	53	3	No
Las Palmas Avenue	East of SR-33 ²	65	66	1	No
Las Palmas Avenue	East of Sycamore Avenue ²	63	62	-1	No
Las Palmas Avenue	East of Poplar Avenue ²	63	63	0	No
Main Avenue	East of Carpenter Road ²	62	62	0	No
Sperry Avenue	East of Rogers Road ²	66	67	1	No
Sperry Avenue	East of Baldwin Road ²	62	62	0	No
Sperry Avenue	East of Walker Ranch Parkway ²	62	63	1	No
Sperry Avenue	East of American Eagle Parkway ²	61	62	1	No
Sperry Avenue	East of Ward Avenue ²	63	64	1	No
Sperry Avenue	East of Del Puerto Avenue ²	62	62	0	No
Notes: ¹ Distance to nearest sensitive receptors shown in Table 3.10-12. ² Nearest sensitive receptor is residential. ³ Nearest sensitive receptor is transient lodging. ⁴ Nearest sensitive receptor is a park. ⁵ Nearest sensitive receptor is office. Source: Michael Brandman Associates, 2012.					

Table 3.10-18 above shows that for the year 2035 conditions, noise level contributions from the proposed project to the study area roadways would range from -2 to 3 dBA L_{dn}. In this scenario, no additional roadway segments would exceed the City's residential noise standard of 60 dBA L_{dn} when compared with year 2035 without project conditions. Of the roadway segments with nearby residential uses that exceed 60 dBA L_{dn} for the without project conditions, the project contribution to

these roadway segments would be less than the 3-dB or greater increase threshold. Of the roadway segments with nearby residential uses that exceed 65 dBA L_{dn} for the without project conditions, the project contribution to these roadway segments would be less than the 1.5-dB or greater increase threshold. This would be considered a less than significant impact.

In addition, none of the roadway segments with adjacent transient lodging uses would exceed the City's exterior standard of 60 dBA L_{dn} . The proposed project would reduce the noise level on the roadway segment of SR-33 north of Sperry Avenue, which has adjacent office uses, and none of the roadway segments with adjacent park uses would exceed the City's exterior standard of 70 dBA L_{dn} .

Offsite Utility Alignments

The vehicular traffic generated from the ongoing operations of the offsite utilities would be limited to maintenance vehicle trips that would occur on a weekly or monthly basis and would not contribute to the daily trip rates. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Non-Transportation Noise

Impact NOI-4:	The proposed project would not generate non-transportation noise levels that cause significant impacts at nearby receptors.

Impact Analysis

This impact addresses checklist items a) and c). The proposed project may cause potential non-transportation noise impacts on the nearby sensitive receptors from the proposed onsite roads, rooftop mechanical equipment, truck loading areas, and parking lot areas. Note that “non-transportation noise” includes onsite vehicle movements, which are transport-related in nature but are occurring within the site boundaries, and therefore have been accounted for in this analysis.

An impact would occur if the non-transportation noise sources would exceed 50 dB L_{eq} or 70 dB L_{max} between 7 a.m. and 10 p.m. or 45 dB L_{eq} or 65 dB L_{max} between 10 p.m. and 7 a.m. In order to assess the proposed project's non-transportation noise impacts on the nearby sensitive receptors, the SoundPlan modeling software was utilized for the L_{eq} analysis and the FHWA-RD-77-108 model was used for the L_{max} analysis.

*West Patterson Business Park Expansion Project**Average Noise Level (L_{eq}) Impacts*

In order to determine if the proposed project would exceed the City of Patterson non-transportation source average noise standard, the project site non-transportation noise sources from all phases with project build out were modeled separately from the transportation noise sources. The results are summarized in Table 3.10-19 and the SoundPlan printouts are provided in Appendix F.

Table 3.10-19: Non-Transportation Average Noise Levels at Nearby Sensitive Receptors

Receiver ¹	Description	dBA L_{eq} Day	dBA L_{eq} Night
1	Single-family home to the north	46	42
2	Single-family home to the northeast	30	27
3	Single-family home to the northeast	30	27
4	Recreational Vehicle to the southeast	45	42
5	Recreational Vehicle to the southeast	44	40
6	Recreational Vehicle to the southeast	44	40
7	Hotel to the southeast	42	39
City of Patterson Non-Transportation Exterior Noise Thresholds		50	45
Note: ¹ Location of Receivers shown on Exhibit 3.10-3, Exhibit 3.10-4, and Exhibit 3.10-6. Source: Michael Brandman Associates, 2012.			

Table 3.10-19 shows that for the non-transportation only scenario, the greatest noise impact would occur at Receiver 1 with noise levels of 46 dBA L_{eq} during the daytime and 42 dBA L_{eq} during the nighttime. These noise levels are within the City's non-transportation average noise level thresholds of 50 dBA L_{eq} during the daytime and 45 dBA L_{eq} during the nighttime. This impact is less than significant.

Maximum Noise Level (L_{max}) Impacts

A Maximum noise level consists of the highest instantaneous noise level during a specified time period. Maximum noise levels from the proposed project would typically occur from slamming of truck doors or start up and shutdown of trash compactors or other mechanical equipment. The maximum noise levels typically will last around a second and occur only a few times a day. Therefore, it is very unlikely to have maximum noise levels from multiple sources occurring simultaneously. Because of this, the maximum noise level from each source has been analyzed separately through the use of the FHWA-RD-77-108 model. Each source was analyzed as a point source, since the L_{max} would occur from one action such as the slamming of a truck door. The propagation of each point source was analyzed based on a "hard-site" drop off rate of 6 dB per doubling of distance. Since the FHWA-RD-77-108 model can only analyze the attenuation of one wall, where there are multiple walls, the wall that would provide the greatest attenuation was

modeled. A summary of the maximum noise level impacts are shown below in Table 3.10-20 and the calculations are shown in Appendix F.

Table 3.10-20: Non-Transportation Maximum Noise Levels at Nearby Sensitive Receptors

Non-Transportation Noise Source	Reference Noise Measurement		Nearest Sensitive Receptor	
	Distance of Receptor to Source (feet)	Noise Level (dB L _{max})	Distance of Receptor to Source (feet)	Noise Level (dB L _{max})
Parking Lots	5	86.9	230	54
Rooftop Mechanical Equipment	10	60.3	260	32
Truck Loading Areas	20	67.0	420	41
City of Patterson Non-Transportation Daytime (7 a.m. to 10 p.m.) Noise Threshold				70
City of Patterson Non-Transportation Nighttime (10 p.m. to 7 a.m.) Noise Threshold				65
Source: Michael Brandman Associates, 2012.				

Table 3.10-20 shows that none of the proposed non-transportation noise sources would exceed the City's daytime threshold of 70 dB L_{max} or nighttime threshold of 65 dB L_{max}. This impact is less than significant.

Offsite Utility Alignments

The offsite utilities would consist of pipelines and any pumps or other mechanical equipment associated with the offsite utilities would be located underground and would not be perceptible above ground. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Combined Transportation and Non-Transportation Noise

Impact NOI-5: The proposed project may generate combined transportation and non-transportation noise levels that cause significant impacts at nearby receptors.

Impact Analysis

This impact addresses checklist items a) and c). This impact evaluates the proposed project's potential to cause a substantial permanent increase in ambient noise levels because of combined transportation and non-transportation noise.

In order for a combined transportation and non-transportation exterior noise impacts created by the proposed project's operations to be considered potentially significant, the proposed project would need to increase the noise levels above 60 dBA L_{dn} /CNEL for outdoor activity areas. Where without project noise exceeds the outdoor activity area threshold, a significant impact would occur where the project would lead to an increase at a noise-sensitive land use by 3.0 dB—where the without project noise level is between 60 and 65 dBA L_{dn} , or 1.5 dBA—where the without-project noise level is greater than 65 dBA L_{dn} .

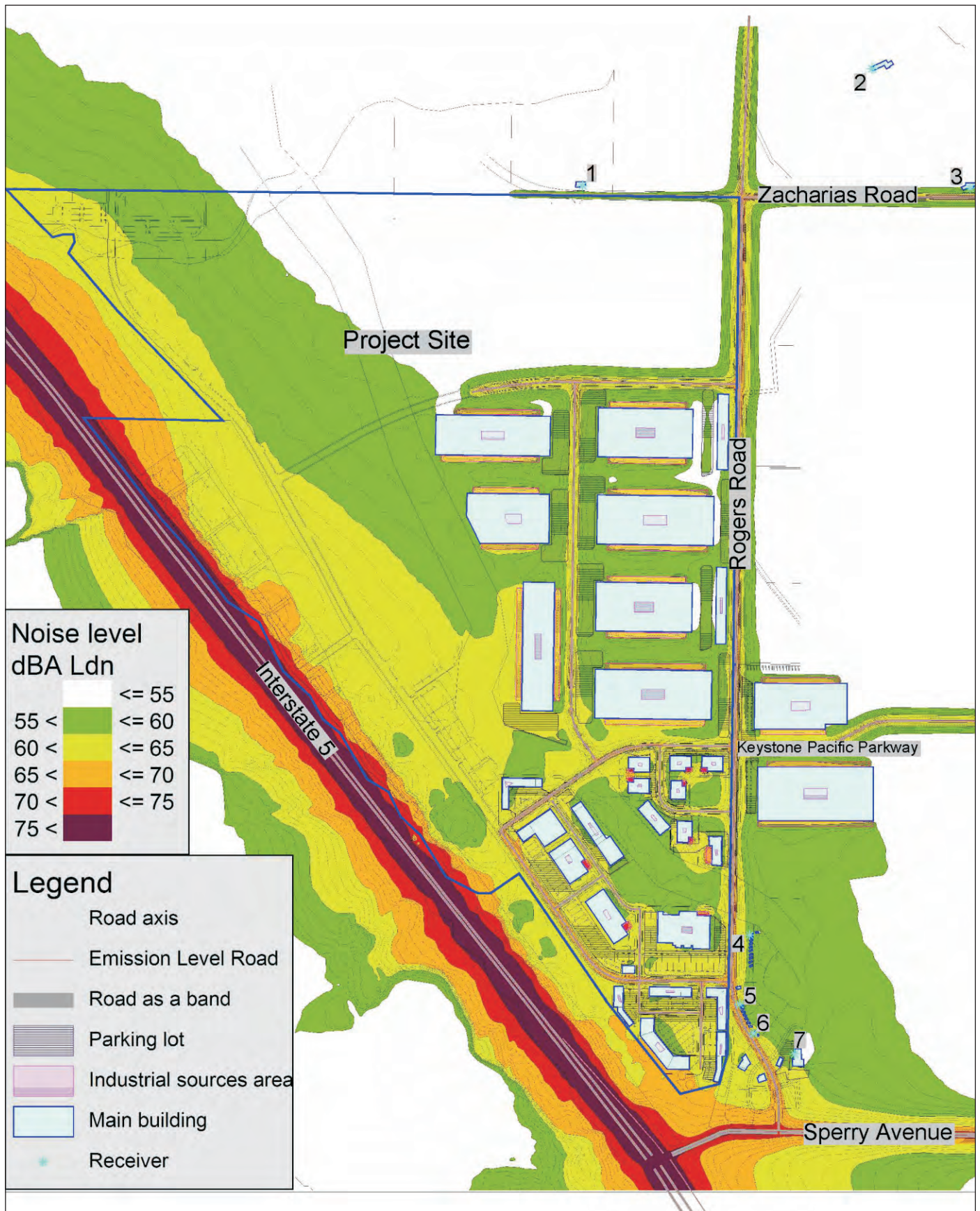
West Patterson Business Park Expansion Project

The proposed project's combined transportation and non-transportation noise impacts have been analyzed for the existing and year 2035 conditions. The combined transportation and stationary exterior noise levels created by the existing and year 2035 scenarios were calculated for the façades of the same nearby receptors that were analyzed for the existing conditions. The results are summarized in Table 3.10-21 and the SoundPlan printouts are provided in Appendix F. Exhibit 3.10-4 show the Existing with Phase I combined noise contours. Exhibit 3.10-5 and Exhibit 3.10-6 shows the year 2035 without and with project combined noise contours, respectively.

Table 3.10-21: Combined Transportation and Non-Transportation Exterior Noise Levels at Nearby Sensitive Receptors

Receiver ¹	Description	Existing (dBA L_{dn})			Year 2035 (dBA L_{dn})		
		No Project	With Phase 1	Increase	No Project	With Project	Increase
1	Single-family home to the north	50	50	0	63	62	-1
2	Single-family home to the northeast	44	45	1	46	47	1
3	Single-family home to the northeast	49	55	6	60	61	1
4	Recreational Vehicle to the southeast	58	59	1	60	60	0
5	Recreational Vehicle to the southeast	62	63	1	63	65	2
6	Recreational Vehicle to the southeast	63	64	1	64	66	2
7	Hotel to the southeast	58	56	-2	58	58	0
Note: ¹ Location of Receivers shown on Exhibit 3.10-3, Exhibit 3.10-4, and Exhibit 3.10-6. Source: Michael Brandman Associates, 2012.							

Table 3.10-21 shows that for the existing and year 2035 conditions, noise level contributions from the proposed project to the analyzed receivers would range from -2 to 6 dBA L_{dn} . For the existing scenario, no receivers would exceed the City's transient lodging and residential exterior noise standard of 60 dBA L_{dn} when compared with the existing without project conditions. For the year 2035 scenario, only Receiver 3 would exceed the City's residential exterior noise standard of 60 dBA L_{dn} when compared with the year 2035 without project conditions.

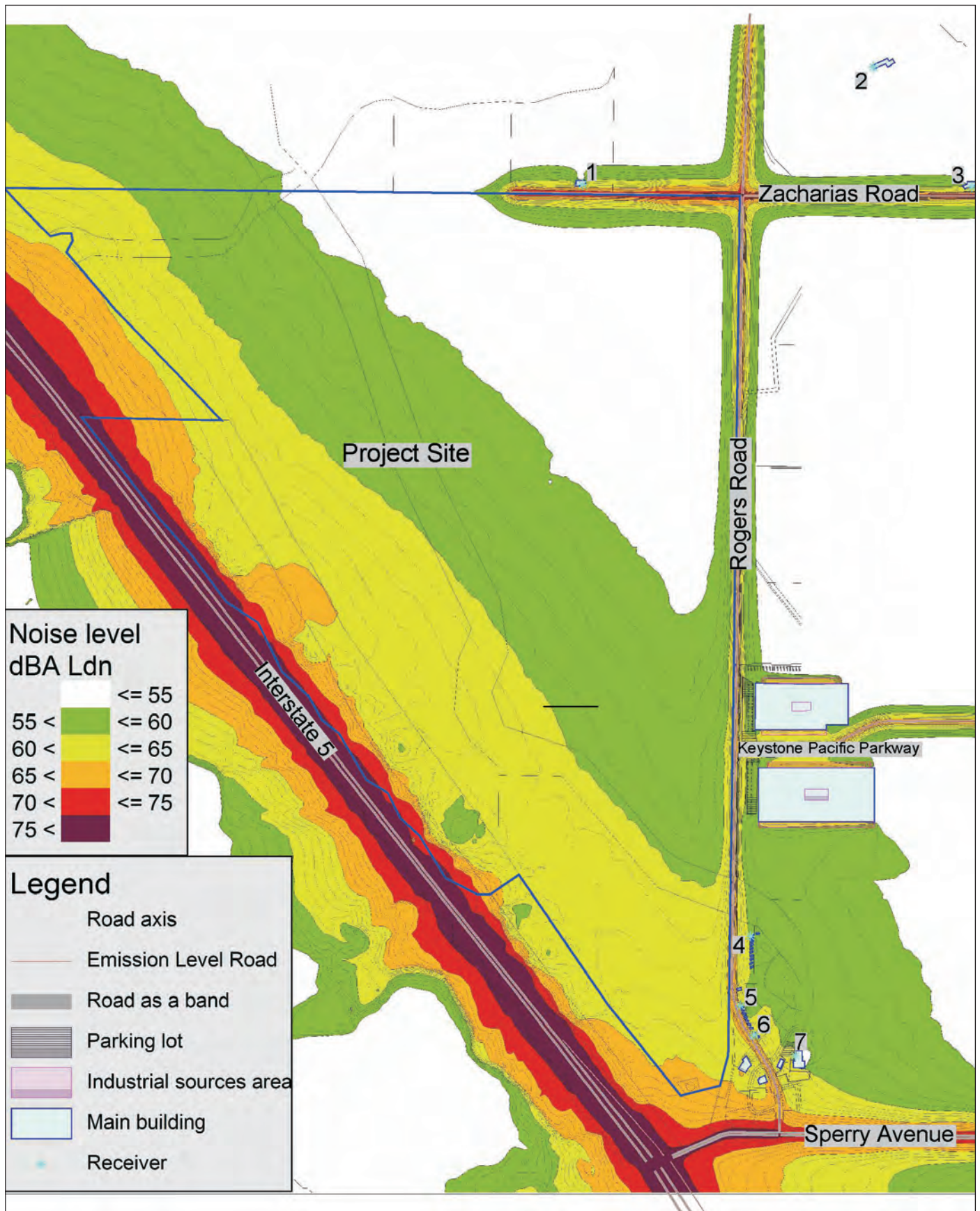


Source: SoundPlan Version 7.1.



Michael Brandman Associates

Exhibit 3.10-4 Existing With Phase 1 of Project Noise Contour Map



Source: SoundPlan Version 7.1.

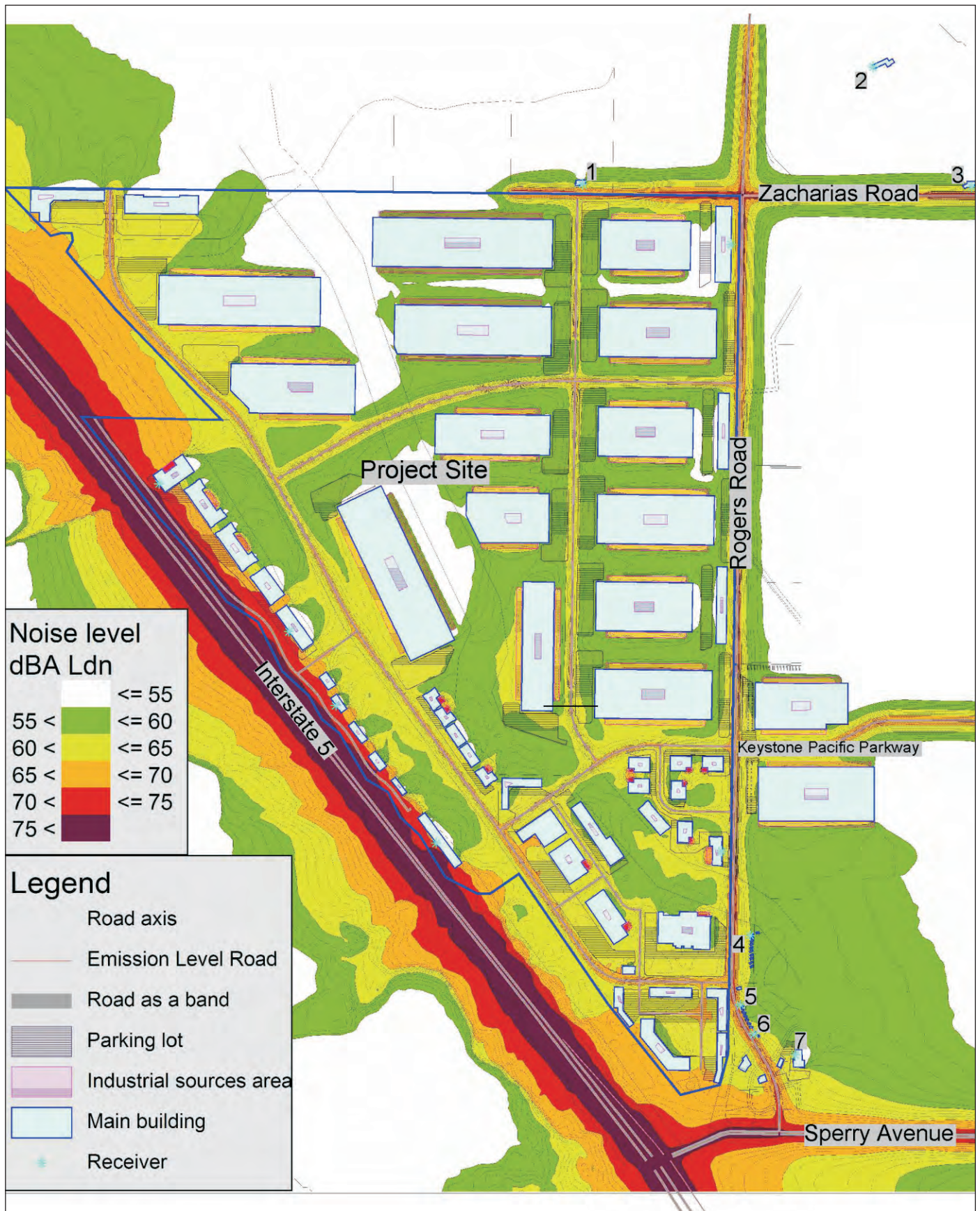


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Exhibit 3.10-5 Year 2035 Without Project Noise Contour Map

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT



Michael Brandman Associates

Exhibit 3.10-6 Year 2035 With Project Noise Contour Map

Of the receivers that are between 60 and 65 dBA L_{dn} for the without project conditions, the project contribution to these receivers would be less than the 3-dB or greater project increase threshold. No receivers exceed 65 dBA L_{dn} , for the without project conditions, so the 1.5-dB project increase threshold does not apply to the combined transportation and non-transportation analysis. This would be considered a significant impact.

The noise impacts to Receiver 3 are created primarily from vehicular traffic operating on public roadways under Year 2035 conditions. Receiver 3 is located along Zacharias Road, which is contemplated to be the future alignment of the South County Expressway under Year 2035 conditions. As such, this receiver may not actually be in this location in 2035, as it would likely be relocated because of the development of the expressway. It would be speculative to predict the location of this receptor in 2035; therefore, feasible mitigation for this impact cannot be identified. As such, this would represent a significant unavoidable impact.

Offsite Utility Alignments

The offsite utilities would consist of pipelines and any pumps or other mechanical equipment associated with the offsite utilities would be located underground and would not be perceptible above ground. Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

No feasible mitigation is available.

Level of Significance After Mitigation

Significant unavoidable impact.

Onsite Noise

Impact NOI-6:	The proposed project would not expose onsite sensitive receptors to noise levels that cause significant impacts.

Impact Analysis

This impact addresses checklist item a). This impact evaluates the noise levels at the proposed office uses.

West Patterson Business Park Expansion Project

The proposed project would result in the development of 13.47 million square feet of business park, general commercial, and light industrial uses, some of which may be used as office space. An onsite noise impact would occur if the noise levels at office uses exceed 60 dB L_{dn} for the outdoor activity areas or 45 dB L_{dn} for the interior areas.

The onsite office noise impacts have been analyzed through the use of the SoundPlan model and the same input parameters that were used for the combined transportation and non-transportation noise impacts for the year 2035 with project scenarios. Receivers were placed at the business park uses that are located near potential sources of noise. Table 3.10-22 provides the calculated noise levels at the exterior of the proposed offices. Table 3.10-22 also provides the anticipated interior noise levels of the proposed offices based on an outside to inside attenuation rate of 30 dB, which is the attenuation typically found in new office construction.

Table 3.10-22: Onsite Noise Impacts

Receiver	Description	Weekday (dBA L _{dn})	
		Exterior Noise	Interior Noise ¹
On1	Office adjacent to I-5	71	41
On2	Office adjacent to I-5	70	40
On3	Office adjacent to I-5	74	44
On4	Office adjacent to I-5	71	41
On5	Office adjacent to Rogers Road	59	29
On6	Office adjacent to Rogers Road	61	31
City of Patterson Office Noise Thresholds		60	45
Note: ¹ Interior noise level based on a 25 dB exterior to interior attenuation rate. Source: SoundPlan Version 7.1; Michael Brandman Associates, 2012.			

Table 3.10-22 shows that the exterior noise levels of Receivers On1, On2, On3, On4, and On6 would exceed the City's 60 dBA L_{dn} exterior office standard and that all receivers would be within the City's 45 dBA L_{dn} interior noise standard of 45 dBA L_{dn}. This would be a significant impact.

Mitigation Measure NOI-6 is proposed that would require that any outdoor activity areas associated with office uses (e.g., seating areas) to be located on the side of the office buildings that is away from I-5 and Rogers Road. Through implementation of Mitigation Measure NOI-1, the noise levels at the office uses would be reduced to less than the City standards. This impact would be reduced to less than significant.

Offsite Utility Alignments

The offsite utilities would consist of pipelines and any pumps or other mechanical equipment associated with the offsite utilities would be located underground and would not be perceptible above ground. Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM NOI-6 Prior to issuance of building permits for any office buildings that would be located within 500 feet of Interstate 5 or Rogers Road, the project applicant shall submit plans to the City of Patterson for review and approval demonstrating that any outdoor uses (e.g., seating areas) are located on the side of the building that is shielded from the roadway. The approved plans shall be incorporated into the proposed project.

Level of Significance After Mitigation

Less than significant impact.

Aviation Noise

Impact NOI-7: The proposed project would not expose persons working or residing in the project vicinity to excessive aviation noise levels.

Impact Analysis

This impact addresses checklist items e) and f). This impact evaluates the potential for the proposed project to expose persons working or residing the project vicinity to excessive aviation noise levels associated with Patterson Airport.

West Patterson Business Park Expansion Project

The project site is within 0.5 mile of the Patterson Airport. As indicated previously, the airport supports small agricultural aircraft and, on occasion, small recreational aircraft. The Stanislaus County Airport Land Use Commission Plan does not establish any aviation noise contours for the Patterson Airport.

As shown in Table 3.10-4, a long-term noise measurement taken near the Patterson Airport yielded a value of 58.4 dBA L_{dn} , which is within the City of Patterson General Plan's "normally acceptable" exterior noise standard for residential uses. Because the proposed project consists of noise-tolerant commercial and light industrial land use activities, it can be concluded that aviation activities would not expose the proposed project to excessive noise levels. Impacts would be less than significant.

Note that the Patterson Airport is anticipated to close at some point in the next several years, as the property was entitled for light industrial development in 2010. Should this occur as contemplated, this would preclude the possibility of significant aviation noise impacts in the project vicinity.

Offsite Utility Alignments

The offsite utilities would consist of pipelines and any pumps or other mechanical equipment associated with the offsite utilities would be located underground and would not be perceptible above ground. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

3.11 - Population and Housing

3.11.1 - Introduction

This section describes the existing population and housing and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information provided by California Department of Finance, California Employment Development Department, and the City of Patterson General Plan.

3.11.2 - Environmental Setting

Current Population and Housing Estimates

The California Department of Finance (DOF) estimated the population of the City of Patterson to be 20,560 as of January 1, 2011. Population and housing characteristics for Patterson are summarized in Table 3.11-1.

Table 3.11-1: Patterson Population and Housing Characteristics (2011)

Population	Total Dwelling Units	Households	Vacant Dwelling Units	Persons per Household
20,560	6,339	5,640	699	3.645
Source: California Department of Finance, 2011.				

Historic Growth

Population

The population of Patterson has grown significantly since 1970. The City's population increased more than six times in the 41 years between 1970 and 2011, growing at a compound annual growth rate of 4.68 percent. The City's historic population growth between 1970 and 2011 is summarized in Table 3.11-2.

Table 3.11-2: Patterson Historical Population Growth

Year	Population	Change from Previous (Percent)
1970	3,147	—
1975	4,040	28.4
1980	3,908	-3.3
1985	4,690	20.0
1990	8,626	83.9
1995	9,734	12.8
2000	11,606	19.2
2005	15,677	35.1
2010	20,413	30.2

Table 3.11-2 (cont.): Patterson Historical Population Growth

Year	Population	Change from Previous (Percent)
2011	20,560	0.7
Net Change	17,413	—
Compound Annual Growth Rate	4.68	
California Department of Finance, 2011.		

Projected Population Growth

Population growth is projected to continue for the near future, primarily driven by continued demand for relatively affordable housing and quality of life in Patterson. The City of Patterson General Plan projects a buildout population of 66,673 persons, which is expected to occur sometime after 2030.

Employment

The California Employment Development Department estimated the Patterson work force to be 6,200 and the Stanislaus County workforce to be 236,200 as of February 2012. Employment characteristics for both Patterson and Stanislaus County are summarized in Table 3.11-3.

Table 3.11-3: Employment Summary

Jurisdiction	Labor Force	Employed Persons	Unemployed Persons	Unemployment Rate
Patterson	6,200	4,700	1,400	23.1%
Stanislaus County	236,200	195,800	40,400	17.1%
Source: California Economic Development Department, 2011.				

Projected Employment Growth

The City of Patterson General Plan projects a buildout employment figure of 32,196, which is expected to occur sometime after 2030.

3.11.3 - Regulatory Framework**State****California Housing Element Law**

State law requires each city and county to adopt a general plan for future growth. This plan must include a housing element that identifies housing needs for all economic segments and provides opportunities for housing development to meet that need. At the state level, the Department of Housing and Community Development (HCD) estimates the relative share of California's projected population growth that would occur in each county in the State, based on DOF population projections and historic growth trends. Where there is a regional council of governments, such as StanCog, HCD provides the regional housing need to the council. The council then assigns a share of the regional housing need to each of its cities and counties. The process of assigning shares provides cities and

counties the opportunity to comment on the proposed allocations. HCD oversees the process to ensure that the council of governments distributes its share of the State's projected housing need.

Each city and county must update its general plan housing element on a regular basis (approximately every 5 years). Among other things, the housing element must incorporate policies and identify potential sites that would accommodate a city's share of the regional housing need. Before adopting an update to its housing element, a city or county must submit the draft to HCD for review. HCD will advise the local jurisdiction whether its housing element complies with the provisions of California Housing Element Law.

The councils of governments are required to assign regional housing shares to the cities and counties within their region on a similar 5-year schedule. At the beginning of each cycle, HCD provides population projections to the councils of governments, which then allocate shares to their cities and counties. The shares of the regional need are allocated before the end of the cycle so that the cities and counties can amend their housing elements by the deadline.

Local

City of Patterson

General Plan

The General Plan establishes the following goals and policies related to population, housing, and employment that are applicable to the proposed project:

- **Goal ED-2:** To prepare and acquire an educated and skilled workforce to match the needs of the local and regional economies.
- **Goal ED-2:** To promote a diverse and balanced mix of employment and housing opportunities.
- **Policy ED-3.1:** Jobs-to-housing ratio. The City shall maintain an adequate retail, business, and industrial land supply to meet a jobs-to-housing ratio of at least 1.0.
- **Goal H-1:** It is the Goal of the City of Patterson to assist in increasing the availability of permanent housing for all community residents.
- **Policy H-1-6-1:** Continue to cooperate with large employers, and major commercial and industrial developers to identify and implement programs to balance employment growth, as outlined in the Land Use Goals of the 2004 Update of the Patterson General Plan, with the ability to provide housing opportunities affordable to the incomes of the newly created job opportunities and consider the effects of new employment, particularly in relation to housing demands, when new commercial or industrial development is proposed.
- **Goal LU-1.6:** Small town character. The City shall seek to preserve Patterson's traditional small-town qualities and agricultural heritage, while increasing its residential and employment base.
- **Goal LU-1.9:** Managing the relationship between jobs and housing. The City shall monitor residential and non-residential development and encourage adjustments as necessary in land use designations and the rate of project approvals to promote a reasonable citywide balance between new employment-generating development and housing development and to minimize traffic impacts.

3.11.4 - Methodology

Impacts on population, housing, and employment were assessed by reviewing existing and anticipated population, housing, and employment projections provided the California Department of Finance and the City of Patterson General Plan. The proposed project's impacts were evaluated by determining their consistency with these estimates and projections.

3.11.5 - Thresholds of Significance

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

- a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
- b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?
- c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

3.11.6 - Project Impacts and Mitigation Measures

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

Growth Inducement

Impact POP-1: **The project would not induce substantial population growth in the area.**

Impact Analysis

CEQA Guidelines Section 15126.2(d) requires that an EIR discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Under this requirement, the courts have interpreted CEQA such that growth-inducing effects of proposed projects should be acknowledged, though in less detail than other, more direct effects resulting from projects.

This impact addresses the potential for direct and indirect growth inducement. Each is discussed separately.

West Patterson Business Park Expansion Project

Direct Population Growth

There are two types of direct growth inducement: construction of new dwelling units and the creation of new job opportunities.

The proposed project does not involve the construction of new dwelling units; therefore, this precludes the possibility of direct growth inducement.

The proposed project consists of the development of approximately 13.47 million square feet of light industrial, business park, and general commercial uses to be built out between 2013 and 2032 under the most aggressive schedule¹. The project is anticipated to create employment opportunities for 10,093 full-time workers at buildout in 2032. This averages to 505 new jobs per year.

As shown in Table 3.11-3, the California Economic Development Department indicates that as of February 2012, there were 1,400 unemployed persons in Patterson (23.1 percent unemployment) and 40,400 unemployed persons in Stanislaus County (17.1 percent unemployment). This indicates that there is ample local labor to fill the new jobs created in the near term.

Over the long term, the City of Patterson General Plan projects a buildout population of 66,673 persons sometime after 2030, or an increase of more than 46,000 persons relative to the 2011 population estimate. To the extent that project employees may move to Patterson as a result of their employment, this in itself would not be considered “growth inducement,” because significant population growth is contemplated by the General Plan. Impacts would be less than significant.

Indirect Population Growth

Indirect growth inducement occurs when “barriers to growth” are removed, such as the extension of essential utilities to unserved areas or when land designated for non-urban use (e.g., agricultural) is re-designated for urban use.

The proposed project would include the extension of roads, storm drainage, water, sewer, electricity, and natural gas services to the project site. The project site is contiguous to the existing West Patterson Business Park and Villa del Lago developments. The City of Patterson General Plan designates the project site “Light Industrial” and “General Commercial” and, thus, contemplates the extension of urban infrastructure to this area. Furthermore, the utilities that would serve the project site are sized to provide capacity for only the proposed project and not for any future projects that could potentially be developed on neighboring properties. As such, the proposed project would not result in indirect population growth.

Offsite Utility Alignments

The offsite utility alignments would serve only the project site and would traverse through an area that has already been developed for urban uses. As such, substantial population growth would not occur as a result of the offsite utility alignments.

Level of Significance Before Mitigation

Less than significant impact.

¹ It is likely that actual buildout of the project would occur well after 2032; however, for the purposes of evaluating a “worst-case” scenario, this EIR will assume the entire project is built out by 2032.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Displacement of Persons or Housing

Impact POP-2:	The project would not displace significant numbers of persons or housing such that new housing would need to be constructed.

Impact Analysis

The Arambel portion of the project site contains an existing, single-family residence. As part of the development of the proposed project, this structure would be removed. The California Department of Finance indicates that the City of Patterson contains 6,339 dwelling units (as of January 1, 2011), of which 699 are classified as “vacant.” Thus, the occupants of the dwelling unit within the project boundaries would be expected to be able to find another existing dwelling unit within the Patterson area easily; therefore, no new housing would need to be constructed for purpose of housing the displaced persons. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

3.12 - Public Services and Utilities

3.12.1 - Introduction

This section describes the existing public services and utilities and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on a Water Supply Assessment prepared by the City of Patterson and information provided by the Patterson Fire Department, Patterson Police Services, Cal Recycle, Turlock Irrigation District, and Pacific Gas and Electric Company. Written responses from service providers are provided in Appendix G. The Water Supply Assessment is provided in Appendix H.

3.12.2 - Environmental Setting

Fire Protection and Emergency Medical Services

Patterson Fire Department

The Patterson Fire Department (Fire Department) provides fire protection and emergency medical services to the City of Patterson. The Fire Department operates two stations, which are summarized in Table 3.12-1.

Table 3.12-1: Patterson Fire Department Station Summary

Station No.	Address	Distance From Project Site	Apparatus	Staffing
1 (Headquarters)	344 West Las Palmas Avenue	3.7 miles	Type-1 Fire Engine (2) Type-2 Rescue Apparatus (1) Chief Officer (Command) Vehicle (3)	Fire Chief (1) Division Chief (2) Line Personnel (2 per 48-hour shift)
2	1950 Keystone Pacific Parkway	1.0 mile	Type-1 Fire Engine* (1-Initial Attack, 1-Reserve Engine) Type-1 Ariel 105-foot Ladder Truck* (1) IRB Rescue Boat (1)	Line Personnel (2 per 48-hour shift)
Notes: Station No. 1 shared with West Stanislaus County Fire Protection District. * The Initial Attack Engine and Type-1 Ladder Truck are cross-staffed by on-duty personnel at Fire Station No. 2. Source: City of Patterson, 2011.				

The Del Puerto Health Care District also provides ambulance services to Patterson and surrounding communities. The Health Care District operates the Health Center at 1108 Ward Avenue in Patterson.

Staffing

The Fire Department is a combination career/volunteer fire agency. The Fire Department's sworn personnel consist of the Fire Chief, two Division Chiefs, 12 full-time career firefighters, and approximately 30 volunteer firefighters. The Fire Department staffs two stations 24 hours a day, 7 days a week with career personnel and additional response provided by volunteers.

Calls for Service

In 2010, the Fire Department responded to 975 calls for service, which included the following calls:

- 75 for fires (structure, vehicle, trash, vegetation, etc.)
- 748 for medical aids/rescues (EMS, vehicle accidents, water rescues, etc.)
- 27 for hazardous conditions (gas leaks, power lines down, structural damage, etc.)
- 50 for service calls (broken hydrants, vehicle lock-outs, public assists, etc.)
- 10 for good intent calls (smoke checks, unauthorized burning, etc.)
- 64 for false alarms (malicious alarms, system malfunctions, smoke detector activations etc.)
- 1 for special incidents (mutual aid, etc.)

Response Times

The Fire Department indicated that the average response time in 2008 was 5 minutes, 31 seconds. According to the Patterson General Plan, the goal for average response time for Priority 1 (emergency) calls is 5 minutes for 95 percent of the calls.

Aid Agreements

The Fire Department has a mutual aid agreement with the West Stanislaus Fire District, neighboring fire agencies located within Stanislaus County (including Woodland Avenue Fire District, Salida Fire District, Westport Fire District, and Mountain View Fire District), and CalFire.

West Stanislaus County Fire Protection District

The West Stanislaus County Fire Protection District (Fire Protection District) provides fire protection and emergency medical services to an approximately 625-square-mile service area that consists of the unincorporated areas that are located west of the San Joaquin River. The Fire Protection District operates six stations, including two shared stations with the Patterson Fire Department and Newman Fire Department. Table 3.12-2 summarizes the Fire Protection District's fire stations.

Table 3.12-2: West Stanislaus County Fire Protection District Station Summary

Station Location	Apparatus
Patterson* (Headquarters)	Type 1 Engine (2) Type 3 Engine (1) Water Tender (1) Rescue Vehicle (1) Truck (1) Command Vehicle (4)
Newman**	Type 1 Engine (1) Type 3 Engine (1) Rescue Vehicle (1)
Crows Landing	Type 1 Engine (2) Water Tender (1)

**Table 3.12-2 (cont.): West Stanislaus County Fire Protection
District Station Summary**

Station Location	Apparatus
Westley	Type 1 Engine (1) Water Tender (1) Rescue Vehicle (1)
El Solyo (Vernalis)	Type 2 Engine (2) Water Tender (1)
Diablo Grande	Type 1 Engine (1) Type 3 Engine (1)
Notes: * Shared with the Patterson Fire Department ** Shared with the Newman Fire Department Source: West Stanislaus Fire Protection District, 2011.	

Staffing

The Fire Protection District is staffed by three career Chief Officers, three career administrative staff persons, 10 volunteer chief officers, 10 volunteer officers, and 100 volunteer firefighters.

Police Protection

Police services in Patterson are provided on a contractual basis by the Stanislaus County Sheriff's Department. Within Patterson, the Police Services is headquartered at 33 South Del Puerto Avenue in downtown Patterson. All law enforcement operations and support services for Patterson originate from the Police Services headquarters.

Staffing

The Police Services currently employs 21 sworn staff and four non-sworn civilian staff.

Calls for Service

In 2010, Patterson Police Services received 17,663 calls for service, and it was indicated that this rate of calls has been steady over the previous 3 years.

Response Times

According to the Patterson General Plan, the goal for average response time for Priority 1 (emergency) calls is 3 minutes. The Police Services has indicated that the response time for Priority 1 calls for service are generally within 3 minutes and, therefore, meets the General Plan goal.

Water

The City of Patterson Public Works Department provides water service to the City of Patterson. Below is a summary of the City's municipal water system based on information provided in the Water Supply Assessment prepared by the City of Patterson (Appendix H).

Water Supplies

Currently, the City uses local (within City boundaries) groundwater to meet all of its municipal and industrial water demands. The City claims an appropriative water right to local groundwater. California groundwater law provides an overlying landowner or groundwater appropriator the right to pump and use the local groundwater for reasonable and beneficial uses. The City's right to groundwater is appropriative rather than overlying because the City pumps and delivers water for use off the parcel where the water is pumped. An appropriative user may put "surplus" groundwater to beneficial use. Surplus groundwater is water available under natural conditions on an average annual basis in an amount greater than average annual demand. If an aquifer becomes overdrafted, then subsequent pumping by appropriators may ripen into a prescriptive right against existing users. Overlying users can protect their rights by continuing to pump and can seek a decree ordering more junior appropriators to curtail or cease withdrawals.

Because groundwater is not regulated by the State, the City is not required to obtain a permit for the use of groundwater. Moreover, the City does not contract with other agencies for delivery of groundwater. Thus, proof of the City's groundwater rights is evinced by historic production and beneficial use of the developed water.

Groundwater Basin

The City of Patterson is within the San Joaquin River Hydrologic Region, as defined by the California Department of Water Resources (DWR).

DWR has studied and monitored groundwater conditions in the Central Valley for over 60 years. DWR Bulletin 118, first released in 1952 and updated 5 times since, provides historical information on groundwater characteristics, well data, and issues of concern regarding groundwater use and management. According to DWR, the region relies heavily on groundwater, with groundwater accounting for about 30 percent of the annual supply used for agricultural and urban purposes in the region. The aquifers are generally quite thick in the San Joaquin Valley subbasins, with groundwater wells commonly extending to depths of 800 feet or deeper. Aquifers include unconsolidated alluvium and consolidated rocks, with unconfined and confined groundwater conditions. Typical well yields in the San Joaquin Valley range from 300 to 2,000 gallons per minute (gpm) with yields of 5,000 gpm possible.

Water quality is marginal but currently acceptable. Background salinity and nitrates in the local groundwater are of concern, and could eventually require one or more forms of treatment to meet drinking water standards. Total dissolved salts are currently under the acceptable limit. Wells with higher nitrates can be used for landscape irrigation, where feasible.

The City of Patterson pumps water from the Delta- Mendota Subbasin of the San Joaquin River Hydrologic Region. The Delta-Mendota Subbasin has not been adjudicated. According to the

Department of Water Resources' Bulletin 118 (2003), the Delta-Mendota Subbasin is not overdrafted, nor is it projected to become overdrafted if present management conditions continue.

Delineation of the Study Area for the Groundwater Sufficiency Analysis

The City of Patterson has recently contracted for studies of the localized groundwater subbasin from which the City pumps. Similar to the 2010 Urban Water Management Plan, for purposes of this analysis, the "Study Boundary" delineated by Kenneth D. Schmidt and Associates, Groundwater Consultants, which incorporates the City of Patterson and surrounding areas, serves as the "Study Area" for comparison and supplies and demands. Groundwater studies of the "local basin" from 2002 through 2010 conducted by Kenneth D. Schmidt and Associates state: "Groundwater is present in two aquifers beneath the City of Patterson . . . water levels in both aquifers have apparently been relatively stable over the long term."

The studies confirmed that there are essentially two aquifers underlying the Study Area: a lower, confined zone and an upper, unconfined zone. The two aquifers are separated by the thick, semi-impermeable Corcoran Clay layer. Because of the importance of understanding the sustainability of groundwater for future planning, a 6-day aquifer test was conducted by Kenneth D. Schmidt and Associates during the week of February 21, 2006. In summary, the new testing efforts resulted in the following conclusions:

1. The lower aquifer (below Corcoran Clay) transmissivity is 80,000 gallons per day per foot (gpd/ft), with a storage coefficient of 0.0003 (compared with 100,000 gpd/ft and 0.001 respectively from 2002 report);
2. No significant downward leakage was found between the upper and lower aquifers (through the Corcoran Clay);
3. Groundwater flow is in a northwesterly direction, as opposed to a northeasterly direction as previously suspected;
4. Total sustainable production from the lower aquifer was higher than estimated in the 2002 study.

Natural inflows to the two aquifers underlying the Study Area were estimated by Kenneth D. Schmidt and Associates to be 3,500 acre-feet/year (upper) and 8,900 acre-feet/year (lower), based on basin hydraulic conductivity, transmissivity, and gradients.

Factors Influencing Inflow to the Study Area

There are three Patterson Irrigation District wells at the periphery of the Study Area. It is possible that the production from these wells influences inflow to the Study Area. Because the Patterson Irrigation District wells are not located in the Study Area but may influence inflow to the Study Area, any impact on inflow from these wells effectively operates as a reduction in available supply. Some estimate has been made of how long the pumps run, but there are no specific production records.

Without production records, it is not possible to quantify the ultimate impact that production from these Patterson Irrigation District wells may have on inflow to the Study Area.

In addition, Stanislaus County has released a Notice of Preparation of a Draft Environmental Impact Report for the Proposed West Park Logistics Center Project (West Park). The proposed West Park project would be located on 2,930 acres south of the City of Patterson. The site consists of the 1,528-acre former Crows Landing Naval Air Facility and approximately 1,402 acres of undeveloped land surrounding the former air field. The 1,402 acres surrounding the former air field are primarily in agricultural land uses, with some rural residential land uses to the southeast. The NOP indicates that groundwater is a potential water supply for the West Park project. In light of the Kenneth D. Schmidt and Associates finding that groundwater generally flows in a northwesterly direction, any upgradient groundwater production to meet West Park demands could have an influence on the groundwater availability in the Study Area. However, without further studies of existing groundwater production on the land where the proposed West Park project will be located, it is not possible to quantify the net change in groundwater production on lands where the proposed West Park project will be located and whether the net change might have an influence on groundwater inflow to the Study Area.

Existing and Future Groundwater Supply in the Local Basin

Potable Water Supply

Based on the groundwater studies by Kenneth D. Schmidt and Associates, the City assumes that 8,900 acre-feet per year are available from the lower aquifer to meet existing and future demands in the Study Area.

Non-Potable Groundwater Supply

According to Kenneth D. Schmidt and Associates, approximately 3,500 acre-feet of water naturally flow into the upper aquifer on an annual basis. It is important to recognize that 3,500 acre-feet/year may not be available to the City now or in the future for the reasons discussed in this section.

The City Council has directed staff to avoid use of shallow groundwater where it can impact residential wells. Thus, the City has imposed an operational limitation on its ability to produce water from the upper aquifer. This limitation effectively reduces the area where the City can install a production well and thereby lowers the available supply it may access from the upper aquifer.

The most recent groundwater basin analysis indicates that urban development may have an impact on the balance of water in the basin. Specifically, Kenneth D. Schmidt and Associates notes that the major sources of recharge to groundwater are deep percolation of water applied for irrigation and canal seepage. Taken together with the Kenneth D. Schmidt and Associates conclusion that no significant downward leakage through the Corcoran Clay is indicated, the limitation that urbanization will place on groundwater recharge will almost exclusively occur in the upper aquifer. However, without further studies, it is uncertain whether and to what extent urbanization will have an impact on available groundwater.

The City will continue to implement its non-potable/recycled water program consistent with the document titled, “City of Patterson, Non Potable Water Master Plan and Feasibility Study,” adopted in 2008. The City’s non-potable/recycled water program allows it to take advantage of lower-quality groundwater in the upper aquifer. The City estimates that public and commercial landscaping accounts for as much as 25 percent of the City’s total annual water use, and over 40 percent of use during peak irrigation months. The City is currently installing a non-potable, dual water system for irrigation of large public and commercial landscapes. The City’s non-potable water delivery system will ultimately allow the City to deliver low-quality groundwater from the upper aquifer, recycled wastewater, and surface water from local irrigation districts. The non-potable delivery infrastructure is expected to be completed by 2014.

Groundwater Supply Summary

When the lower aquifer and upper aquifer groundwater supplies are combined, the total available groundwater supply in the Study Area is estimated to be a maximum of 12,500 acre-feet/year on an average annual basis. Table 3.12-3 shows the available potable and nonpotable groundwater supplies. The City anticipates this supply will be available for the foreseeable future.

Table 3.12-3: Annual Groundwater Supply Available in the Study Area

Supply	Acre-Feet per Year	Ever Used
Potable Groundwater	8,900	Yes
Non Potable Groundwater	3,500	Yes
Source: City of Patterson, 2012.		

Dry Year Supplies

Generally, the City has a reliable supply of source water. However, recent groundwater studies indicate that the aquifer is susceptible to water level fluctuations during dry periods. Based on a local hydrograph measuring water level trends in the upper aquifer, water levels have twice fallen over a period of years in the recent past. A downward trend in water levels over a period of years is distinct from seasonal variation in water levels, when it is expected that groundwater levels fall during the summer and fall irrigation season and rise again in the winter and spring. The recent water level declines in the upper aquifer occurred during the 1990–1995 period and again between about 2006 and 2009. It is uncertain whether these long-term declines are attributable to an increase in groundwater withdrawals due to reduced surface water deliveries from the Delta-Mendota Canal and/or the San Joaquin River, or whether they are attributable to fallowing, thereby reducing groundwater recharge through deep percolation. While demand is currently low enough and recharge is still significant, the water supply from the upper aquifer has been highly reliable. This could change with urbanization and a reduction in recharge to the upper aquifer. Without further studies regarding the impacts of urbanization on recharge, it is not currently possible to quantify the impact, though it is almost certain that the supply from the upper aquifer will not be 100 percent reliable in the future, during both normal and dry years, because of the potential imbalance in the groundwater budget. Because of the inability

to quantify potential reductions in recharge and available groundwater supply, Table 3.12-4 shows 100 percent of the estimated inflow as available in all year types.

Table 3.12-4: Supply Reliability for 2032

Normal Water Year	Acre-Feet/Year				
	Single Dry Water Year	Multiple Dry Water Years			
		Year 1	Year 2	Year 3	Year 4
Lower Aquifer					
8,900	8,900	8,900	8,900	8,900	8,900
% of Normal	100.0%	100.0%	100.0%	100.0%	100.0%
Upper Aquifer					
3,500	3,500	3,500	3,500	3,500	3,500
Percent of Normal	100.0%	100.0%	100.0%	100.0%	100.0%
Source: City of Patterson, 2012.					

Description of Groundwater Pumping

The City owns and operates nine water production wells, with a total production capacity of approximately 13 million gallons per day (mgd). Two of the production wells are dedicated for non-potable use. Characteristics of each well are provided in Table 3.12-5.

Table 3.12-5: City of Patterson Groundwater Well Summary

Well	Type	Year Built	Depth (feet)	Screens (feet)	Flow (gpm)
2	Production	1947	360	170–356	750
4	Production (Non-Potable)	1971	433	204–433	850
5	Production	1986	565	390–565	1,400
6	Production	1994	365	225–255	500
				345–355	
7	Production	1999	597	342–597	1,400
8	Production	2004	470	340–390	1,000
				444–460	
9	Production	2009	480	320–470	850
10	Monitor	2001	550	310–530	NA
11	Production	2007	540	320–450	1,200

Table 3.12-5 (cont.): City of Patterson Groundwater Well Summary

Well	Type	Year Built	Depth (feet)	Screens (feet)	Flow (gpm)
N/A	Keystone (Non-Potable)	2011	286	176–272	1,200
Total City Well Production					9,150
Notes: Well No. 1 was destroyed in 1998. Well No. 3 was placed in inactive status by the City in 1998 because of excessive sand production. Source: City of Patterson, 2012.					

As with numerous other Central Valley cities that rely solely on groundwater, the City of Patterson relies on historic production records to support its groundwater right. Table 3.12-6 shows groundwater production by year for the period between 2006 and 2010. The City has pumped between 3,272 and 4,400 acre-feet/year during this period. The production records appear to support a claim to about 4,000 acre-feet of groundwater, assuming it is being applied to a beneficial use.

Table 3.12-6: City Historic Groundwater Production

Year	Production (Acre-Feet/Year)
2006	3,750
2007	3,272
2008	4,401
2009	3,836
2010	3,884
Source: City of Patterson, 2012.	

Table 3.12-7 provides the quantity of groundwater produced for agricultural irrigation at the site where the proposed project will be located. The project site is located in the Study Area and is a groundwater demand on the local basin in addition to the City's demand.

Table 3.12-7: Groundwater Pumped for Project Site

Year	Production (acre-feet/year)
2007	1,743
2008	1,594
2009	2,543
2010	2,887
2011	1,049
Source: City of Patterson, 2012.	

Table 3.12-8 shows the amount and type of groundwater that the City anticipates pumping through 2032.

Table 3.12-8: Annual Groundwater Supply Available in the Study Area

Source	Acre-Feet/Year					
	2010	2012	2017	2022	2027	2032
Potable	3,884	4,378	4,695	5,132	6,059	6,986
Non-potable	—	365	666	1,217	2,218	3,220
Total	3,884	4,743	5,361	6,349	8,278	10,206
Source: City of Patterson, 2012.						

Water Demands

Water demand in the City is a function of several factors. These include the price of water, lot size, income, demographics, land uses, conservation measures, and climate. Although price is a deterrent, it does not always result in sustained reductions in water use. Since a large portion of water goes to outside use to irrigate landscaping, communities such as the City that are located in warmer areas typically consume more water during the year.

City water demand (reflected as a function of groundwater production) has increased with population growth, but not in direct proportion. From 1980 to 2010, groundwater production increased by 444 percent, whereas the population increased by 520 percent. From 2005 to 2010, relative increases were 119 percent production and 128 percent population. Hence, water production has not historically increased in direct proportion to population growth.

Because of the local climate (hot and dry), the City would be expected to have demands similar to other communities in the Central Valley. However, according to DWR, the average urban use in the region is 248 gallons per capita day (gpcd). The City currently uses 169 gpcd. In accordance with the Water Conservation Act of 2009, the City has set its conservation target in the year 2020 at 160 gpcd.

Part of the reason the City's per capita water use is much lower than the regional average is that the City has an effective water conservation program. The City meters nearly all of its services, and it has an increasing tiered rate schedule to encourage efficient water use. The City ordinances discourage water waste, including odd-even watering, and penalties for irrigation "runoff." In 2008, the City began replacing its oldest water pipes, which had the highest frequency of leaks and repairs.

Existing and Projected City Demand

Water Code Section 10910(c)(3) requires consideration of whether available water supplies will be sufficient to meet the demand associated with the proposed project, in addition to the public water system's existing and planned future uses. This section discusses the City's existing and planned future uses, including the proposed project. The existing and projected water demands for the City

are a function of land uses and water demand factors for those uses. This section discusses each in turn, and provides demand estimates in 5-year increments through 2032, which includes buildout of the Project and the City's planned future projects.

Existing and Projected Land Uses

Table 3.12-9 contains acreage for existing land uses in the City with a water demand. These existing uses are consistent with those used in the General Plan Water Supply Assessment developed as part of the 2010 General Plan update process. To project future land uses, the City has determined which projects it anticipates will be undertaken within the same time frame as the proposed project, or are otherwise expected to be completed during the same time frame as the proposed project.

The City is updating its infrastructure master plans as a result of the 2010 General Plan process. As part of that update, the land use projections for the next 10 years (through 2022) were reviewed. The growth projections for the infrastructure master plans were developed by starting with a list of identified projects and projecting the additional residential units and non-residential square footage that the City anticipates for each project through 2022. (See Appendix H for the identified projects and the City's projections for additional residential units, and non-residential square footage and acreage through 2022.) As shown in Appendix H, the City anticipates about 4.2 million square feet of the project will be developed by 2022. For all identified projects, the acreage associated with the additional residential units and non-residential square footage was calculated and incorporated in Table 3.12-9.

To project growth in residential acreage from 2022 through 2032, a population growth rate of 2.5 percent per year was used to calculate population in each year during this period. Starting with a population of 24,557 persons in 2022, and adjusting population by 2.5 percent per year results in a population of 31,435 persons in 2032. The change in population during this period is 6,878 persons. Assuming 3.3 persons per unit (consistent with the General Plan), the City anticipates adding about 2,084 units between 2022 and 2032. The additional 2,084 units were distributed across four residential land use categories—Low Density Residential, Medium Density Residential, High Density Residential, and Downtown Core—by using a distribution percentage roughly consistent with the anticipated Villages of Patterson distribution across these housing types, because Villages is the most substantial, currently approved residential project that the City anticipates will develop during the period 2023 and 2032. The distribution percentages used were Low Density Residential (24%), Medium Density Residential (68%), High Density Residential (6%), and Downtown Core (2%). Any residential acreage associated with approved residential projects remaining undeveloped at 2032 based on this growth projection and unit distribution process was distributed equally across the period 2023–2032. (See Appendix H for acreage associated with currently approved projects that was distributed across the period 2023–2032.)

To project non-residential acreage during the period between 2023 and 2032, the City assumes buildout of the General Plan area will occur by 2060. Non-residential acreage by land use was

calculated for each year from 2023 to 2032 along this buildout trajectory. Any acreage associated with approved projects that would not be captured in this growth trajectory by 2032 was distributed equally across the period 2023–2032. This approach results in acreage projections that reflect full buildout of the project and currently approved projects by 2032. (See Appendix H for acreage associated with currently approved projects that was distributed across the period 2023–2032.)

Using this approach, total non-residential acreage in 2027 and 2032 was calculated and is included in Table 3.12-9.

Water Demand Factors

As discussed in the General Plan Water Supply Assessment, water demand factors represent the typical amount of water that would be used by a given land use in a given amount of time. For the General Plan Water Supply Assessment, the City developed water demand factors by examining historical uses in the City and uses in neighboring communities. Based on the historical water uses by land use classification, the City developed water demand factors for existing land uses. It also evaluated water demand factors in neighboring communities to develop water demand factors for the land use classifications in the City's General Plan for which there was no historical water demand. Ultimately, the City developed a set of recommended water demand factors that were used to calculate water demands for various land-use alternatives in the General Plan.

The recommended water demand factors from the General Plan Water Supply Assessment are shown in Table 3.12-10. The water demand factors are based on gross acres of land annual water use, measured in acre-feet, and are presented for each land use category. Total water demand by gross acre is divided into a "potable" and "non-potable" component. The potable and nonpotable components were developed by first estimating the percentage of unit water demand attributable to indoor use. Residential indoor water use percentages range from 37 percent to 43 percent. Nonresidential indoor use percentages range between 15 percent for parks to 52 percent for mixed-use commercial land uses. Some nonpotable demands are currently served by lower-quality groundwater from the upper aquifer and such service will continue into the foreseeable future. The non-potable demands could also use recycled water supplies to the extent such supplies are available in the future.

For the General Plan Water Supply Assessment, in light of the statutory requirement to reduce water use by 20 percent by 2020, the City also developed water demand factors assuming 20 percent conservation. The mandatory conservation requirements include The Water Conservation Act of 2009, Property Transfers: Replacement of Plumbing Fixtures, The Water Conservation in Landscaping Act, and the 2008 California Green Building Standards Code. The City anticipates these measures will drive a reduction in water demand factors and a commensurate reduction in per capita water use by 2020. New development is expected to use nearly 20 percent less water than existing development, due to existing and mandatory water conservation programs. The City also plans to implement a retrofit program for the approximately 2,300 connections that were constructed before 1994. The water demand factors, assuming 20 percent conservation, are included in Table 3.12-10.

Table 3.12-9: City of Patterson Existing and Planned Acreage in 2032

General Plan Land Use Designation	2010 (existing)	2012	2017	2022	2027	2032
Mixed-Use Hillside	—	—	—	—	—	—
Estate Residential	—	—	—	—	—	—
Low Density Residential	794	798	821	849	912	974
Medium Density Residential	14	14	33	112	249	386
High Density Residential	24	29	37	47	66	86
Downtown Residential	128	128	128	128	128	128
Downtown Core	22	22	23	23	25	27
General Commercial	116	127	147	167	252	336
Highway Service Commercial	20	20	21	23	32	41
Neighborhood Commercial	—	—	—	—	6	12
Medical/Professional Office	5	5	22	31	31	31
Light Industrial	2	321	552	652	1,094	1,585
Heavy Industrial	93	93	93	93	141	188
Public/Quasi-Public	328	328	328	328	347	367
Public/Quasi-Public from New Residential	—	1	11	198	241	285
Parks and Recreation	103	103	103	103	126	149
New Residential Parks	—	—	5	15	43	71
Other	703	708	723	731	838	945
Total	2,603	2,697	3,046	3,500	4,530	5,559
Source: City of Patterson, 2012						

Table 3.12-10: Water Demand Factors

General Plan Land Use Designation	Recommended Water Demand Factors Used in GP WSA			Water Demand Factors with 20% Conservation		
	Potable (ac-ft/ac)	Non-Potable (ac-ft/ac)	Total	Potable (ac-ft/ac)	Non-Potable (ac-ft/ac)	Total
Mixed-Use Hillside	1.06	1.69	2.75	0.92	1.28	2.20
Estate Residential	0.48	0.77	1.25	0.42	0.58	1.00
Low Density Residential	1.21	1.92	3.13	1.05	1.45	2.50
Medium Density Residential	1.17	1.86	3.03	1.02	1.41	2.43
High Density Residential	1.93	3.23	5.16	1.67	2.46	4.13
Downtown Residential	1.07	1.43	2.50	0.95	1.05	2.00
Downtown Core	1.25	1.15	2.40	1.11	0.79	1.90
General Commercial	0.85	1.11	1.96	1.00	0.70	1.70
Highway Service Commercial	1.32	1.34	2.66	1.89	0.76	2.65
Neighborhood Commercial	0.86	1.11	1.97	1.06	0.71	1.77
Medical/Professional Office	0.87	1.13	2.00	1.23	0.66	1.90
Light Industrial	0.41	1.30	1.71	0.80	0.65	1.45
Heavy Industrial	0.88	1.58	2.46	1.90	0.76	2.66
Public/Quasi-Public	1.00	1.59	2.59	0.87	1.20	2.07
Public/Quasi-Public from New Residential	1.00	1.59	2.59	0.87	1.20	2.07
Parks and Recreation	0.57	3.20	3.77	0.38	2.64	3.01
New Residential Parks	0.57	3.20	3.77	0.38	2.64	3.01
Other	—	—	—	—	—	—
Source: City of Patterson, 2012.						

Table 3.12-11 shows the City's projected water demand, including the proposed project, through 2032. The demand projection was developed using the data in Table 3.12-9 and Table 3.12-10. Table 3.12-11 captures the demand for the proposed project and the City's other planned future uses. The demand calculation uses the "water demand factors with 20 percent conservation" from Table 3.12-10. The 2032 water demand estimate is 10,206 acre-feet/year, with the demand split about 70 percent/ 30 percent between potable and nonpotable demands, respectively.

As will be discussed in Impact PSU-3, total project water demand is estimated to be 1,397 acre-feet/year. Again, the entire demand projected for the project is captured in the City's demand projections in Table 3.12-11.

Total Projected Study Area Water Demand

The City has identified other groundwater producers in the Study Area. These producers are using the same groundwater supply as the City; therefore, these competing demands may reduce the groundwater supply available to the City. To address the potential impact associated with these competing demands, this section discusses existing and future groundwater use throughout the Study Area. While it is not possible to quantify all other demands in the Study Area, it is important to recognize that these are additional demands on groundwater that could limit the City's future claims to groundwater from the local basin.

First, local commercial groundwater producers within the City's municipal boundary but outside its water service area may be producing significant quantities of groundwater. One private well used for food processing alone may generate about 1,000 acre-feet per year. In addition, there is an estimated several hundred more acre-feet per year of private pumping for a small lake and other uses in the City. It is not certain from which aquifer all of these producers take water, though it can reasonably be assumed that a food processor would be pumping from the lower aquifer because of the need for high-quality water in food processing. In total, private commercial producers may pump as much as 1,300 acre-feet/year. The private commercial uses are anticipated to remain in place for the foreseeable future.

Within the Study Area, there are private landowners producing groundwater for irrigation. For example, groundwater is currently produced by the landowner/operator on the project site. Between 2007 and 2011, average annual groundwater pumping for the project site was about 1,900 acre-feet. While groundwater production for the project site will eventually cease, production by the existing agricultural uses (Arambel) provides an illustration of the potential magnitude of groundwater production by agricultural water users located in the Del Puerto Water District.

In addition to the owner of the project site, there are likely other private producers in the Study Area pumping water for agricultural irrigation, though it is not possible to identify these producers at this time or the quantities of water that they might be producing. As for other existing agricultural lands relying on groundwater from the basin below the Study Area, it is not clear what the net effect of

groundwater production from these lands will be on the groundwater basin as the land transitions to municipal and industrial uses. It is likely that there is going to remain considerable groundwater production for agricultural uses in the Study Area for many years, given the City's current growth projections.

In addition, there could be irrigation district wells located in the Study Area, given the presence of three irrigation districts in the General Plan area other than the City. These districts are Patterson Irrigation District, West Stanislaus Irrigation District, and Del Puerto Water District. Currently, it is known that these districts do produce groundwater, though it is not clear whether district wells are located in the Study Area. In addition, if there are wells, it is not known how much they produce. Nevertheless, it is important to recognize that the irrigation districts may be placing a demand on the local basin as well.

Recent research in conjunction with installation of City Well 9 indicates that there are, at a minimum, hundreds of private wells in the Study Area. During construction of Well 9, approximately 200 private wells were found within about 1 mile of Well 9. Given the limited area searched for the presence of wells during installation of Well 9, there could be additional private wells throughout the Study Area. Assuming these wells are used for rural residential purposes, water is probably drawn primarily from the upper aquifer. Assuming rural residential wells produce water for land uses similar to the "Estate Residential" classification, then each would demand about 1.0 acre-foot/acre/year (assumes 0.5 unit per acre). Based solely on identification of wells during installation of Well 9, there could be at least 400 acre-feet/year of demand from the upper aquifer claimed by private pumpers for rural residential uses.

Currently, it is not possible to estimate the total existing or future demand in the Study Area in addition to the City demand, because of the uncertainty regarding the groundwater production associated with demands for private commercial, private irrigation, rural residential, and irrigation district groundwater use. Nevertheless, it is important to recognize that existing additional demands in the Study Area may be between 3,200 and 3,600 acre-feet/year when the private irrigation, private commercial, and rural residential demands are considered. This demand will decrease by 1,900 acre-feet/year once the proposed project is built and groundwater production associated with the project site ceases. At that time, future additional Study Area demand will drop to a minimum of 1,300 to 1,700 acre-feet/year.

Table 3.12-11: City of Patterson Estimated Water Demands Through Year 2032

General Plan Land Use Designation	2012	2017	2022	2027	2032
Mixed-Use Hillside	—	—	—	—	—
Estate Residential	—	—	—	—	—
Low Density Residential	1,994	2,053	2,123	2,279	2,435

Table 3.12-11 (cont.): City of Patterson Estimated Water Demands Through Year 2032

General Plan Land Use Designation	2012	2017	2022	2027	2032
Medium Density Residential	35	79	272	605	938
High Density Residential	120	153	194	274	354
Downtown Residential	256	256	256	256	256
Downtown Core	42	44	44	48	51
General Commercial	216	249	285	428	572
Highway Service Commercial	54	55	61	84	108
Neighborhood Commercial	—	—	—	11	21
Medical/Professional Office	9	42	58	58	58
Light Industrial (g)	467	803	948	1590	2,232
Heavy Industrial	249	249	249	374	499
Public/Quasi-Public	680	680	680	720	760
Public/Quasi-Public from New Residential	2	22	410	500	590
Parks and Recreation	309	309	309	379	449
New Residential Parks	—	15	45	130	215
Other	—	—	—	—	—
Sub-total	4,433	5,010	5,934	7,736	9,538
Loss (7% of Demand)	310	351	415	542	668
Total	4,743	5,361	6,349	8,278	10,206
Potable Demand	4,378	4,695	5,132	6,059	6,986
Non-Potable Demand	365	666	1,217	2,218	3,220
Source: City of Patterson, 2012					

*Adequacy of Water Supply**Normal Year*

Table 3.12-12 provides a comparison of the City's projected water demands and the groundwater supplies available in the portion of the basin underlying the Study Area, in a normal water year. Table 3.12-12 shows a difference in 2032 between City demand and groundwater supply available in the Study Area of about 2,000 acre-feet when potable and non-potable supplies are combined. In a normal water year, groundwater supplies are projected to be sufficient to meet projected demands.

Single Dry Year

Table 3.12-13 provides a comparison of the City's projected water demands and the groundwater supplies available in the portion of the basin underlying the Study Area, in a single dry water year. While Table 3.12-13 indicates that there should be a sufficient water supply in a single dry water

year, there are at least two factors that could reduce the water supply available. First, as previously discussed, groundwater supplies, particularly in the upper aquifer, are probably not going to be 100 percent reliable in dry years at the point competing demands for groundwater in the upper aquifer approach estimated upper aquifer inflow. Recent groundwater hydrographs show extended declines in water levels during dry year periods. If years prior to a single dry year have been wet or above average, the groundwater supplies may be adequate in a single dry year. Alternatively, in a severe single dry year following moderately dry years, with a higher future demand on the basin, a reliability issue may arise with increased production. In addition, a reduction in groundwater recharge caused by urbanization may contribute to water level declines in the upper aquifer, and a corresponding reduction in available supplies. On the demand side, water use for outdoor irrigation often increases in a dry year because of the need to irrigate earlier in the season that is due to a lack of precipitation. Thus, dry-year nonpotable demands may be slightly higher than estimated in Table 3.12-13, which could impact water supply sufficiency.

Multiple Dry Year Periods

Table 3.12-14 provides a comparison of the City's projected water demands and the groundwater supplies available in the portion of the basin underlying the Study Area, in a multiple dry water year period. Table 3.12-14 indicates that available groundwater should be sufficient to meet City demands during a multiple dry year period. However, similar to the single dry year analysis, water supplies, particularly in the upper aquifer, are unlikely to be 100-percent reliable during a multiple dry year period. During multiple dry year periods, the water levels in the upper aquifer are susceptible to significant declines, similar to those seen during the 1990–1995 and 2006–2009 dry year periods. It is uncertain whether these declines will ultimately impact water supply reliability for the City, but the data indicate that there is a potential for reduction in available supplies. In addition, water demands associated with irrigation may increase in a dry year, as discussed for the single dry year condition. In light of these factors, and with an overall increase in groundwater demand in the future, the groundwater supply may not be as reliable as current projections indicate.

Sufficiency Conclusion

Based on this analysis, there sufficient groundwater supplies are projected to be available for the proposed project and the City's planned demands during normal, single dry, and multiple dry water years.

Other Water Supply Sources

The Water Supply Assessment noted that the City of Patterson is pursuing other water supply options including non-potable/recycled water, artificial recharge, and surface water transfer. Each option is briefly summarized.

Non-potable/recycled water is the most advanced option, with the City currently implementing a non-potable/recycled water program that uses non-potable groundwater from the upper aquifer for non-potable use. The non-potable/recycled water system is partially completed at the time of this writing,

with a small number of landscaped areas being irrigated with non-potable groundwater. Ultimately, the City plans on adding treated wastewater from the Water Quality Control Facility for a portion of the non-potable supply.

The City plans to implement a groundwater recharge program that will use stormwater, recycled water, and surface water to recharge the groundwater basin. At buildout of the City's General Plan area, the City estimates it could achieve annual average recapture of recharged water between 6,651 and 9,838 acre-feet.

Finally, surface water transfer is considered a conceptual option for augmenting water supply in the long-term. At the time of this writing, the City has not executed any formal agreements for surface or groundwater transfers. The City proposes to develop a water program master plan, which will identify transfer options, including capacities, locations, costs, treatment systems, conveyance systems, reliability, and other characteristics. In the future, through transfer agreements, the City may be able to acquire water from the San Joaquin River, Delta Mendota Canal, or California Aqueduct.

Table 3.12-12: 20-Year Water Supply and Demand Projections – Normal Water Year (Acre-Feet)

Demand Sector (af/yr)	2012 af/yr		2017 af/yr		2022 af/yr		2027 af/yr		2032 af/yr	
	Potable	Non-Potable	Potable	Non-Potable	Potable	Non-Potable	Potable	Non-Potable	Potable	Non-Potable
City	4,378	365	4,695	666	5,132	1,217	6,059	2,218	6,986	3,220
Demand Total	4,378	365	4,695	666	5,132	1,217	6,059	2,218	6,986	3,220
GW Supply Available in the Study Area	8,900	3,500	8,900	3,500	8,900	3,500	8,900	3,500	8,900	3,500
Difference between GW Supply and Demand	4,522	3,135	4,205	2,834	3,768	2,283	2,841	1,282	1,914	280
Source: City of Patterson, 2012.										

Table 3.12-13: 20-Year Water Supply and Demand Projections – Single Dry Water Year (Acre-Feet)

Demand Sector (af/yr)	2012 af/yr		2017 af/yr		2022 af/yr		2027 af/yr		2032 af/yr	
	Potable	Non-Potable	Potable	Non-Potable	Potable	Non-Potable	Potable	Non-Potable	Potable	Non-Potable
City	4,378	365	4,695	666	5,132	1,217	6,059	2,218	6,986	3,220
Demand Total	4,378	365	4,695	666	5,132	1,217	6,059	2,218	6,986	3,220
Single Dry Year GW Supply Available in the Study Area	8,900	3,500	8,900	3,500	8,900	3,500	8,900	3,500	8,900	3,500
Difference between GW Supply and Demand	4,522	3,135	4,205	2,834	3,768	2,283	2,841	1,282	1,914	280
Source: City of Patterson, 2012.										

Table 3.12-14: 20-Year Water Supply and Demand Projections – Multiple Dry Water Year (Acre-Feet)

Demand Sector (af/yr)	2012 af/yr		2017 af/yr		2022 af/yr		2027 af/yr		2032 af/yr	
	Potable	Non-Potable	Potable	Non-Potable	Potable	Non-Potable	Potable	Non-Potable	Potable	Non-Potable
City	4,378	365	4,695	666	5,132	1,217	6,059	2,218	6,986	3,220
Demand Total	4,378	365	4,695	666	5,132	1,217	6,059	2,218	6,986	3,220
Multiple Dry Year GW Supply Available in the Study Area, Year 1	8,900	3,500	8,900	3,500	8,900	3,500	8,900	3,500	8,900	3,500
Multiple Dry Year GW Supply Available in the Study Area, Year 2	8,900	3,500	8,900	3,500	8,900	3,500	8,900	3,500	8,900	3,500
Multiple Dry Year GW Supply Available in the Study Area, Year 2	8,900	3,500	8,900	3,500	8,900	3,500	8,900	3,500	8,900	3,500
Difference between GW Supply and Demand, Year 1	4,522	3,135	4,205	2,834	3,768	2,283	2,841	1,282	1,914	280
Difference between GW Supply and Demand, Year 2	4,522	3,135	4,205	2,834	3,768	2,283	2,841	1,282	1,914	280
Difference between GW Supply and Demand, Year 3	4,522	3,135	4,205	2,834	3,768	2,283	2,841	1,282	1,914	280
Source: City of Patterson, 2012.										

Wastewater

The Wastewater Division of the Patterson Public Works Department provides wastewater transmission, treatment, and disposal for both the City of Patterson and Diablo Grande, a small community located 6 miles to the west. A network of sanitary sewer collection pipelines, approximately 63.4 miles in length and ranging in diameter from 6 to 33 inches, collects wastewater throughout the City. The main trunk pipeline is located beneath Walnut Avenue. Two lift stations assist in the conveyance of wastewater to the Water Quality Control Facility. The Water Quality Control Facility, which occupies approximately 160 acres, is located at 14901 Poplar Avenue and is permitted to treat 2.25 million gallons of effluent per day. According to the Department of Public Works, an average of 1.40 million gallons of effluent is received by the Water Quality Control Facility each day. Treated effluent is disposed of via percolation and evaporation in ponds.

The City of Patterson has prepared improvement plans and acquired land for the expansion of the facility. The plans call for expanding the facility's treatment capacity by 1.25 mgd to 3.50 mgd. The City completed environmental review of the expansion pursuant to the California Environmental Quality Act.

Storm Drainage

The developed areas of the City of Patterson are served by a municipal storm drain system. On the west side of the City, the storm drain system discharges runoff into Salado Creek.

In the project vicinity, limited storm drainage facilities exist (roadside ditches, swales, etc.), reflecting the current agricultural uses of the project site and surrounding area. This area is not currently served by the City's municipal storm drainage system.

Solid Waste

Bertolotti Disposal provides solid waste collection within the City of Patterson. After collection, solid waste is disposed of at the Fink Road Landfill. The landfill's characteristics are summarized in Table 3.12-15. As shown in the table, the Fink Road Landfill has approximately 10 million cubic yards of remaining capacity.

Table 3.12-15: Landfill Summary

Landfill	Location	Maximum Daily Throughput (tons)	Remaining Capacity (cubic yards)
Fink Road Landfill	Crows Landing	2,400	10 million
Note: The Fink Road Landfill's maximum permitted capacity is 14.5 million cubic yards; therefore, 69 percent of its capacity is unused. Source: Cal Recycle, 2010.			

Energy

Electricity

Turlock Irrigation District (TID), a special district based in Turlock, provides electricity service to a 662-square-mile service area that encompasses portions of Stanislaus, Merced, Tuolumne, and Mariposa counties. The City of Patterson is within TID's service area in Stanislaus County. TID obtains electricity from generation sources including hydroelectric, natural gas, coal, wind, solar, geothermal, and methane gas fuel cell. TID delivered 3.3 million megawatt hours of electricity in 2008.

Natural Gas

Pacific Gas and Electric Company (PG&E) provides natural gas to most of the northern and central portions of the State, including the City of Patterson. PG&E obtains more than 59 percent of its natural gas supplies from western Canada and the balance from U.S. sources. PG&E operates approximately 49,000 miles of transmission and distribution pipelines. In 2010, PG&E delivered 842 billion cubic feet (Bcf) of natural gas to its customers.

3.12.3 - Regulatory Framework

State

California Building Standards Code

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, is a compilation of three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national and international model codes.
- Building standards that have been adopted and adapted from the national and international model code standards to meet California conditions.
- Building standards, authorized by the California legislature, that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns.

The California Fire Code is a component of the California Building Standards Code and contains fire-safety-related building standards.

California Green Building Standards Code

The California Green Building Standard Code was adopted January 12, 2009. The purpose of this code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories:

- Planning and design
- Energy efficiency

- Water efficiency and conservation
- Material conservation and resource efficiency
- Environmental air quality

The Code addresses exterior envelope, water efficiency, and material conservation components. The aim is to reduce energy usage in non-residential buildings by 20 percent by 2015 and help meet reductions contemplated in AB 32. With the 2008 Building Code, a 15-percent energy reduction over the 2007 edition is expected. Compliance will be mandatory as of January 1, 2011.

California Urban Water Management Planning Act

The Urban Water Management Planning Act (California Water Code Sections 10610-10656) requires that all urban water suppliers with at least 3,000 customers prepare urban water management plans and update them every 5 years. The act requires that urban water management plans include a description of water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions. Specifically, urban water management plans must:

- Provide current and projected population, climate, and other demographic factors affecting the supplier's water management planning;
- Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier;
- Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage;
- Describe plans to supplement or replace that source with alternative sources or water demand management measures;
- Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis (associated with systems that use surface water);
- Quantify past and current water use;
- Provide a description of the supplier's water demand management measures, including schedule of implementation, program to measure effectiveness of measures, and anticipated water demand reductions associated with the measures;
- Assess the water supply reliability.

Pursuant to the Urban Water Management Planning Act, the City of Patterson prepared and maintains an Urban Water Management Plan.

Model Water Efficient Landscape Ordinance

The Model Water Efficient Landscape Ordinance was adopted by the Office of Administrative Law in September 2009 and requires local agencies to implement water efficiency measures as part of its

review of landscaping plans. Local agencies can either adopt the Model Water Efficient Landscape Ordinance or incorporate provisions of the ordinance into code requirements for landscaping. For new landscaping projects of 2,500 square feet or more that require a discretionary or ministerial approval, the applicant is required to submit a detailed “Landscape Documentation Package” that discusses water efficiency, soil management, and landscape design elements.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State Legislature passed AB 939, the California Integrated Waste Management Act of 1989, effective January 1990. The legislation required each local jurisdiction in the State to set diversion requirements of 25 percent by 1995 and 50 percent by 2000; established a comprehensive statewide system of permitting, inspections, enforcement, and maintenance for solid waste facilities; and authorized local jurisdictions to impose fees based on the types or amounts of solid waste generated. In 2007, SB 1016, Wiggins, Chapter 343, Statutes of 2008, introduced a new per capita disposal and goal measurement system that moves the emphasis from an estimated diversion measurement number to using an actual disposal measurement number as a per capita disposal rate factor. As such, the new disposal-based indicator (pounds per person per year) uses only two factors: a jurisdiction’s population (or in some cases employment) and its disposal as reported by disposal facilities. The Stanislaus County Regional Solid Waste Planning Agency’s¹ disposal rate goal is 5.7 pounds per person per year. In 2008, the agency’s reported disposal rate was 3.9 pounds per person per year.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned telecommunication, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. It is the responsibility of the CPUC to (1) assure California utility customers have safe, reliable utility service at reasonable rates, (2) protect utility customers from fraud, and (3) promote a healthy California economy. The Public Utilities Code, adopted by the legislature, defines the jurisdiction of the CPUC.

Title 24, California’s Energy Efficiency Standards for Residential and Nonresidential Buildings

Title 24, Part 6, of the California Code of Regulations establishes California’s Energy Efficiency Standards for Residential and Nonresidential Buildings. The standards were updated in 2005 and recently amended in 2008. The 2008 standards set a goal of reducing growth in electricity use by 561.2 gigawatt-hours per year (GWh/y) and growth in natural gas use by 19 million therms per year (therms/y). The savings attributable to new nonresidential buildings are 151.2 GWh/y of electricity savings and 3.3 million therms. For nonresidential buildings, the standards establish minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., heating, ventilation, and air conditioning [HVAC]; and water heating systems), indoor and outdoor lighting, and illuminated signs.

¹ The City of Patterson is a member agency of the Stanislaus County Regional Solid Waste Planning Agency.

Local

City of Patterson

General Plan

The General Plan establishes the following goals and policies associated with public services and utilities that are applicable to the proposed project:

- **Goal PS-1:** To maintain an adequate level of service in the City's water system to meet the needs of existing and future development.
- **Policy PS-1.1:** The City shall continue to use groundwater as a source of domestic water for the city. The City shall also pursue, as expeditiously as possible, acquisition of surface water rights to supplement its water supply in order to accommodate projected water demand and provide for water supply security.
- **Policy PS-1.2:** City-owned systems. The City shall expand and develop water treatment, distribution, and storage facility systems to accommodate the needs of existing and planned development.
- **Policy PS-1.3:** Supply for new development. The City shall not approve any new development without the demonstrated assurance of an adequate water supply to support such development that meets City criteria for both potable and non-potable demands, and a City-approved funding mechanism to pay for necessary improvements. Such assurance shall be provided in a form and manner determined by the City, and may include, but is not limited to, the following:
 - a. A contract between the property owner(s) and a water purveyor guaranteeing the long-term delivery of a suitable quantity of water to serve the intended use of the property consistent with the General Plan;
 - b. A contract between a water purveyor and the City guaranteeing the long-term delivery of a suitable quantity of water to serve the intended use of the property consistent with the General Plan;
 - c. Such other mechanism suitable to the City.
- **Policy PS-1.4:** Agency coordination. The City shall coordinate, to the extent feasible, with other agencies involved in water resource development in the region.
- **Policy PS-1.5:** Water conservation. To minimize the need for the development of new water sources and facilities and sewer treatment needs, the City shall promote water conservation both in City operations and in private development.
- **Policy PS-1.6:** Reclaimed water. The City shall require the use of reclaimed water by industrial, commercial, recreational, agricultural and roadway landscaping uses.
- **Policy PS-1.9:** Adequate fire flows. The City shall ensure the provision of water supply, storage, and adequately sized pipelines to provide fire flows to meet recommendations of the City Fire Chief and City Engineer (see Policy HS-3.2).
- **Goal PS-1.10:** Improvement costs. The City shall, through a combination of water development fees and other funding mechanisms, ensure that new development pays its share of the costs of water system improvements.

- **Policy PS-1.11:** New development conservation measures. The City shall require all new development to use best available technologies for water conservation including, but not limited to, water-conserving toilets, showerheads, faucets, and irrigation systems.
- **Goal PS-2:** To maintain an adequate level of service in the City's wastewater collection and disposal system to meet the needs of existing and future development.
- **Policy PS-2.2:** Provision of sewer service. The City shall ensure the provision of adequate sewer service to all new development in the city and support the extension of sewer service to existing developed areas where this service is lacking.
- **Policy PS-2.3:** Treatment capacity. The City shall expand and develop new wastewater treatment and disposal capacity as needed to accommodate the needs of existing and planned development.
- **Policy PS-2.4:** Fair share costs. The City shall, through a combination of development impact fees and other funding mechanisms, ensure that new development pays its fair share of the costs of sewer system improvements.
- **Policy PS-2.5:** Reuse of treated water. The City shall research viable options for the reuse of treated wastewater, in conjunction with industrial, commercial, agricultural, recreational, and public landscaping uses.
- **Policy PS-2.7:** Wastewater treatment standards. The City shall ensure that all discharge standards established by the Regional Water Control Board are met in the operation of the wastewater treatment facility.
- **Goal PS-3:** To maintain an adequate level of service in the City's storm drainage system to accommodate runoff from existing and future development and to prevent property damage due to flooding.
- **Policy PS-3.1:** Upgrading of drainage systems. Where practical and economical, the City shall upgrade existing drainage facilities as necessary to correct localized flooding problems.
- **Policy PS-3.2:** Expansion of drainage systems. The City shall expand and develop storm drainage facilities to accommodate the needs of existing and planned development.
- **Policy PS-3.4:** Fair share costs. The City shall, through a combination of drainage improvement fees and other funding mechanisms, ensure that new development pays its fair share of the costs of drainage system improvements.
- **Policy PS-3.5:** Pollutant requirements. Future drainage system discharges shall comply with applicable state and federal pollutant discharge requirements.
- **Policy PS-3.6:** National Flood Insurance Program. The City shall continue to participate in the National Flood Insurance Program. To this end, the City shall ensure that its regulations are in full compliance with standards adopted by the Federal Emergency Management Agency.
- **Policy PS-3.8:** Finish floor elevation – non-residential development. Non-residential development shall be anchored and flood-proofed to prevent damage from the 100-year flood or, alternatively, elevated to at least 12 inches above the 100-year flood level.

- **Policy PS-3.10:** Storm drainage improvements required. Construction of storm drainage improvements shall be required, as appropriate, to prevent flooding during periods of heavy rainfall.
- **Policy PS-3.11:** Conditions for grading. The City shall impose appropriate conditions on grading projects performed during the rainy season to ensure that silt is not conveyed to storm drainage systems.
- **Policy PS-3.12:** Detention basins. The City shall ensure that stormwater detention basin designs provide safety for the public, are visually appealing and unobtrusive, incorporate wildlife habitat, and, where feasible, offer recreational opportunities.
- **Policy PS-3.13:** Surface pollutant control. The City shall require new development to incorporate runoff control measures to minimize discharge of surface pollutants into drainage systems. Examples of potential programs include:
 - The use of “bioswales” and similar features (such as infiltration trenches, filter trips, and vegetated buffers) to trap contaminants;
 - Installation of grease/oil separators to keep these contaminants out of storm runoff;
 - Regular street sweeping programs to prevent the buildup of oil, grease, and other contaminants and keep them from being swept into creeks and rivers;
 - Minimizing pesticide use and promoting the use of natural pest controls;
 - Encouraging the installation of “gray water” systems.
- **Policy PS-3.14:** Erosion control. The City shall require new development to incorporate erosion control measures to minimize sedimentation of streams and other natural drainage features.
- **Goal PS-4:** To provide for the efficient collection and disposal of solid waste while minimizing impacts to the physical and social environment.
- **Policy PS-4.1:** Reduction goals. The City shall study and actively pursue methods of solid waste recycling and reuse, including source separation, with the goal of reducing its solid waste generation by 25 percent by the year 2015 and 50 percent by the year 2020.
- **Policy PS-4.2:** Garbage collection. The City shall continue to require mandatory garbage collection throughout the city.
- **Policy PS-4.4:** Construction debris. The City shall require the separation and recycling of all recyclable or reusable materials from construction debris.
- **Policy PS-4.8:** Private usage of recycled products. The City shall encourage businesses and residents to purchase and use recycled and recyclable products.
- **Goal PS-5:** To ensure that an adequate level of police service is maintained as new development occurs.
- **Policy PS-5.1:** Police response time. The City shall, through adequate staffing and patrol arrangements, and through the establishment of police stations/patrol offices, endeavor to maintain the minimum feasible response times for police calls for all parts of the City. The goal for average response time for Priority 1 (emergency) calls shall be three minutes.

- **Policy PS-5.2:** Response time monitoring. The Police Services Department shall continually monitor response times and report annually on the results of the monitoring.
- **Policy PS-5.3:** Ratio of police officers to population. The City shall endeavor to achieve and maintain a ratio of 1.5 police officers per 1,000 population.
- **Policy PS-5.4:** Agency cooperation. The City shall continue to work with other agencies to facilitate the most cost-effective provision of law enforcement and social services for Patterson residents.
- **Goal PS-6:** To ensure that an adequate level of fire service is maintained as new development occurs.
- **Policy PS-6.1:** Fire response time. The City shall endeavor to achieve and maintain an overall fire insurance (ISO) rating of 5 or better. The goal for average response time for Priority 1 (emergency) calls shall be five minutes for 95 percent of the calls.
- **Policy PS-6.2:** Location of stations. Fire stations shall be strategically located to ensure optimal response time. The existence of physical barriers such as railroad tracks shall be an important siting consideration.
- **Policy PS-6.3:** Fire Code requirements. The City shall continue to apply the California Fire Code requirements for built-in fire suppression equipment in all new development.
- **Policy PS-6.4:** Ratio of fire fighters to population. The City shall endeavor to achieve and maintain a ratio of 1.0 fire fighters per 1,000 population.
- **Policy PS-9.3:** Underground utilities. The City shall, where suitable, require all new electrical and communication facilities to be installed underground or, in the case of transformers, pad-mounted. The City shall actively promote the undergrounding of existing overhead facilities.

Municipal Code

The Municipal Code includes by adoption the California Fire Code as published by the International Code Council and referred to as the Fire Code of the City of Patterson. The Fire Code regulates and governs the safeguarding of life and property from fire and explosion hazards.

Chapter 13.02 of the Municipal Code includes the Sanitary Code, which provides policies regarding sewer system operation and requirements. The City of Patterson requires the use of the existing public sewer system where available.

West Patterson Financing Authority

The West Patterson Financing Authority was formed by the City of Patterson in 2001 to fund and implement necessary public infrastructure improvements in conjunction with new development on the west side of Patterson. The Patterson City Council acts as the West Patterson Financing Authority Board of Directors. The West Patterson Financing Authority established Community Facilities District No. 2001-01 (Public Improvements) in 2001 and Community Facilities District No. 2005-01 (West Patterson Business Park) in 2005. The boundaries of Community Facilities District No. 2001-01 generally encompass the residential development between Baldwin Avenue and Ward Avenue,

and the boundaries of Community Facilities District No. 2005-01 encompass the 820-acre West Patterson Business Park. Since 2002, the West Patterson Financing Authority has issued approximately \$73 million in Special Tax Bonds to fund improvements. Special tax levies are assessed to properties with the Community Facilities Districts to repay the bonds.

3.12.4 - Methodology

Michael Brandman Associates consulted with public services and utility providers regarding their ability to serve the proposed project. Letters were sent to the Patterson Police Department, the Patterson Fire Department, the Patterson Public Works Department, TID, and PG&E requesting information about their ability to serve the proposed project. The agency responses are provided in Appendix G.

The City of Patterson prepared a Water Supply Assessment that evaluated the proposed project's water demand in relation to available supplies. The complete Water Supply Assessment is provided in Appendix H.

3.12.5 - Thresholds of Significance

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

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

- a) Fire Protection?
- b) Police Protection?
- c) Schools? (Refer to Section 7, Effects Found Not To Be Significant.)
- d) Parks? (Refer to Section 7, Effects Found Not To Be Significant.)
- e) Other public facilities? (Refer to Section 7, Effects Found Not To Be Significant.)

To determine whether impacts to utilities and services are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
- Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?
- Comply with federal, state, and local statutes and regulations related to solid waste?
- Result in inefficient, wasteful, or unnecessary consumption of energy?

3.12.6 - Project Impacts and Mitigation Measures

Fire Protection and Emergency Medical Services

Impact PSU-1: **The proposed project may result in a need for new or expanded fire protection facilities that would have physical impacts on the environment.**

Impact Analysis

This impact assesses whether the proposed project would result in a need for new or expanded fire protection and emergency medical service facilities.

The Fire Department provided written responses to a questionnaire regarding impacts to fire protection and emergency medical services. The responses are summarized below and a copy of the document is provided in Appendix G.

West Patterson Business Park Expansion Project

The project site is currently served by the West Stanislaus County Fire Protection District. After annexation into the City of Patterson, the proposed project may be served by either the Patterson Fire Department or the West Stanislaus County Fire Protection District. The fire agency will be determined prior to the proposed annexation is submitted to the Stanislaus Local Agency Formation Commission.

The Patterson Fire Department Chief, who also serves as the West Stanislaus County Fire Protection District Chief, provided a written response dated November 9, 2011 (Appendix G) that indicated that the proposed project would be anticipated to increase the Fire Department's annual calls for service by 10 to 15 percent, depending on end use. The Fire Chief stated that the majority of calls would be expected to involve medical emergencies, false alarms, vehicle accidents, and vehicle, trash, or vegetation fires. The Fire Chief indicated that compliance with the Fire Code would be expected to minimize calls associated with structural fires.

The Fire Chief indicated that the estimated increase in calls for service would create a need for additional personnel to staff Patterson Fire Station No. 2 and, as the project is built out, an additional fire station and apparatus would likely be needed, located at (or adjacent to) the northern portion of the project site. The project applicant has identified a potential location for this station along the East-West Internal Roadway within the Arambel Business Park. Addition of personnel to Fire Station No. 2 would allow both the Fire Engine and Ladder Truck to be staffed, thereby eliminating the need for “cross-staffing” of equipment and allowing two individually staffed apparatus to respond to simultaneous calls. Mitigation Measure PSU-1 requires the project applicant to make an irrevocable dedication offer to the City of Patterson for a fire station site prior to recordation of the final map for the Arambel Business Park.

The City of Patterson and the project applicant intend to pursue a Community Facilities District or other financing mechanism similar to the existing Community Facilities District No. 2005-01 for the West Patterson Business Park to fund and implement public infrastructure improvements for the proposed project. The financing mechanism would be overseen by the City of Patterson and would have the ability to issue bonds for infrastructure improvements and levy assessments against property owners within the district boundaries to repay the bonds. When project buildout triggers the need for the improvements, the City would use the bond proceeds to install the improvements. Mitigation Measure TRANS-1a requires the applicant and the City to establish the financing mechanism prior to recordation on the first final map. This financing mechanism would be the means by which the new fire station is constructed and maintained.

In addition, the Patterson Fire Chief expressed concern regarding emergency access to the portion of the project located between the California Aqueduct and I-5. The project applicant is proposing to develop an Emergency Vehicle Access that would link this area to Del Puerto Canyon Road via an existing unpaved road that crosses under I-5; refer to Exhibit 2-8 in Section 2, Project Description. The applicant would improve the road to provide an all-weather surface and control access to the road with a gate to prevent unauthorized use. The provision of the Emergency Vehicle Access would ensure that the area between I-5 and the California Aqueduct are served with a minimum two points of access in accordance with the California Fire Code’s requirements.

In recognition that the Patterson Fire Department must deem the Emergency Vehicle Access to be acceptable, Mitigation Measure HAZ-4 requires the City of Patterson to review and approve the proposed emergency vehicle access points in accordance with California Fire Code requirements.

Finally, the proposed project would be required to pay development fees in accordance with the City’s development fee schedule at the time building permits are sought. The fee schedule includes fees that would fund capital improvements to fire protection facilities.

With the implementation of mitigation, impacts would be less than significant.

Offsite Utility Alignments

The offsite utility alignments would not require fire protection or emergency medical services. No impact would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures HAZ-4 and TRANS-1a and:

MM PSU-1 Prior to recordation of the final map for the Arambel Business Park for where the new fire station would be located, the project applicant shall make an irrevocable dedication offer to the City of Patterson for a new fire station site. The fire station site shall provide the minimum amount of acreage necessary to meet industry standards for a fire station site. The terms of the dedication shall be negotiated as part of the Development Agreement. Should the City of Patterson elect to develop the new fire station at another location, the applicant shall have the ability to retain the acreage for private use. The Community Facility District or similar financing mechanism would fund construction of the fire station.

Level of Significance After Mitigation

Less than significant impact.

Police Protection

Impact PSU-2:	The proposed project may contribute to a need for new or expanded police protection facilities that would have physical impacts on the environment.

Impact Analysis

This impact assesses whether the proposed project would result in a need for new or expanded police protection facilities.

The Patterson Police Services provided written responses to a questionnaire regarding impacts to police protection. The responses are summarized below and a copy of the document is provided in Appendix G.

West Patterson Business Park Expansion Project

Police services in Patterson are provided on a contractual basis by the Stanislaus County Sheriff's Department. The Patterson Police Chief provided an email response dated November 22, 2011 (Appendix G) that indicated that the proposed project would be anticipated to result in an increase in calls for service, primarily associated with burglaries, theft, shoplifting, alarms, vehicle accidents, graffiti, trash, panhandling, and vandalism. The Police Chief indicated that the increase in calls for service would create a need for a minimum of two additional deputies per shift. The addition of these

deputies would allow one deputy to be on calls at the site while two deputies remain to serve the rest of the City.

The Patterson City Council has discretion over police staffing levels. The proposed project's uses would generate new fiscal revenues for the City of Patterson in several ways, including sales tax, property tax, and business license fees, which may be used to fund additional police staffing. Regardless, police staffing levels do not have physical impacts on the environment and, therefore, are outside the scope of this EIR.

The Police Chief also indicated that security measures such as video surveillance should be installed around buildings and parking lots to protect the public and provide evidence to law enforcement in the event of a crime. In recognition that the types of security measures will vary based on end use, Mitigation Measure PSU-2 is proposed that would require the applicant to consult with Patterson Police Services prior to issuance of the certificate of occupancy about appropriate security measures for each project building.

In addition, the Police Chief expressed concern regarding emergency access to the portion of the project located between the California Aqueduct and I-5. The project applicant is proposing to develop an Emergency Vehicle Access that would link this area to Del Puerto Canyon Road via an existing unpaved road that crosses under I-5. The applicant would improve the road to provide an all-weather surface and control access to the road with a gate to prevent unauthorized use. The provision of the Emergency Vehicle Access would ensure that the area between I-5 and the California Aqueduct are served with a minimum two points of access in accordance with the California Fire Code's requirements.

Finally, the proposed project would be required to pay development fees in accordance with the City's development fee schedule at the time building permits are sought. The fee schedule includes fees that would fund capital improvements to police protection facilities.

Impacts would be less than significant.

Offsite Utility Alignments

The offsite utility alignments would not require police services. No impact would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM PSU-2 Prior to the issuance of the certificate of occupancy for each project building, the project applicant shall consult with the Patterson Police Department regarding appropriate security measures. Such measures may include video surveillance systems, fencing, lighting, onsite security personnel, parking lot patrols, or other

appropriate measures. The mutually agreed upon measures shall be incorporated into the plans for each building.

Level of Significance After Mitigation

Less than significant impact.

Water

Impact PSU-3: The proposed project would increase water demand and, therefore, may require additional entitlements and supplies.

Impact Analysis

The proposed project estimated water demands are provided in Table 3.12-16.

Table 3.12-16: Annual Project Demands

Land Use	Gross Acreage	Water Demand (acre-feet/year)		
		Potable	Non- Potable	Total Water Demand
Office	96.0	118	63	181
Irrigation	37.0	0	98	98
Industrial	626.1	501	407	908
Commercial	123.4	123	86	210
Basins	66.6	0	0	0
Total	949.0	742	654	1,397
Source: City of Patterson, 2012.				

As previously discussed, the City of Patterson 2010 Urban Water Management Plan's long-range water supply planning projections (refer to Table 3.12-11) account for the proposed project's water demand. The Urban Water Management Plan projects city water demand to consist of 6,986 acre-feet of potable demand (lower aquifer) and 3,220 acre-feet of non-potable demand (upper aquifer). Supplies are anticipated to consist of 8,900 acre-feet of potable water (lower aquifer) and 3,500 acre-feet of non-potable (upper aquifer). As such, groundwater supplies available are projected to be sufficient for the proposed project and the City's planned demands during normal, single dry, and multiple dry water years over a 20-year time horizon

In recognition that the City's long-term water supply planning projections account for water conservation, Mitigation Measure PSU-3 requires the project applicant to incorporate applicable Best Management Practices into project design and landscaping. The incorporation of these measures would ensure that the proposed project would be consistent with the water conservation measures outlined in the Urban Water Management Plan. With the implementation of this mitigation measure, impacts would be reduced to a level of less than significant.

Finally, as previously discussed, the City of Patterson and project applicant intend to pursue a Community Facilities District or other financing mechanism similar to the existing Community Facilities District No. 2005-01 for the West Patterson Business Park to fund and implement public infrastructure improvements for the proposed project. The financing mechanism would be overseen by the City of Patterson and would have the ability to issue bonds for infrastructure improvements and levy assessments against property owners within the district boundaries to repay the bonds. When project buildout triggers the need for the improvements, the City would use the bond proceeds to install the improvements. Mitigation Measure TRANS-1a requires the applicant and the City to establish the financing mechanism prior to recordation on the first final map. This financing mechanism would be the means by which water infrastructure is constructed and maintained.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure TRANS-1a and:

- MM PSU-3** Prior to the issuance of building permits for each project building, the project applicant shall submit plans to the City of Patterson for review and approval that demonstrate that applicable water conservation Best Management Practices have been incorporated into project design and landscaping. Examples of Best Management Practices include but are not limited to low-water-use fixtures (e.g., restroom sinks, urinals, and toilets) and water-conserving landscaping (e.g., drought-tolerant species). The approved plans shall be incorporated into the proposed project.

Level of Significance After Mitigation

Less than significant impact.

Wastewater

Impact PSU-4: The proposed project may require the expansion of wastewater treatment capacity.

Impact Analysis

This impact analysis discusses the estimated increase in wastewater generated by the proposed project, and the associated need for additional treatment capacity and infrastructure.

West Patterson Business Park Expansion Project

The proposed project would construct approximately 13.47 million square feet of light industrial, business park, and general commercial uses and associated infrastructure. Wastewater services for the project site would be provided by the City of Patterson.

Using wastewater generation rates provided by the City of Patterson, the proposed project is estimated to generate 533,900 gallons of wastewater per day (0.534 mgd). On an annual basis, this would equate to approximately 194 million gallons, or 598 acre-feet of wastewater.

The City of Patterson's Water Quality Control Facility is currently permitted to treat 2.25 mgd and receives an average of 1.4 mgd during dry weather conditions.

The City approved a 1.25-mgd expansion of the Water Quality Control Facility in 2010, which would increase capacity of 3.50 mgd. However, since approval of the expansion, regulations have been put in place that increase the period of time that wastewater needs to be stored onsite, which effectively reduce sewage treatment capacity by as much as 0.50 mgd, for a capacity of 3.00 mgd.

Furthermore, the City has approximately 1.332 mgd of capacity committed to other approved projects. When the existing dry weather flows of 1.432 mgd are accounted for, there is a projected future demand of 2.764 mgd, leaving 0.236 mgd available to the proposed project and other projects.

As previously noted, the proposed project would generate 0.534 mgd at buildout. Thus, the expanded treatment plant would only be able to treat 0.298 mgd or 56 percent of the proposed project's effluent relative to existing and committed capacity numbers. This number would be lower if other planned or approved projects use up available uncommitted capacity.

In recognition that the Water Quality Control Facility may not have capacity to serve the entire project, the project applicant has proposed to develop a privately owned onsite wastewater treatment plant (known as a "package plant") to serve one or more phases of the project. The untreated effluent would be pumped to a treatment plant located within the Arambel portion of the project site in the vicinity of the Delta-Mendota Canal. The facility would have a footprint as much as 7.5 acres. The facility would be a prefabricated, packaged wastewater treatment plant with related equipment designed and constructed to comply with Title 22 requirements for use as recycled water. The package plant will have a maximum capacity of 0.700 mgd, which would be sufficient to serve the entire project (which is projected to generated 0.534 mgd of effluent at buildout). Refer to Section 2, Project Description for detailed description of the onsite wastewater treatment plant.

To ensure that adequate wastewater treatment capacity is available to serve the proposed project, Mitigation Measure PSU-4 is proposed requiring the applicant to (1) connect to the City's municipal wastewater collection and treatment system and pay fair share fees, or (2) install a permitted, privately owned and operated, onsite wastewater treatment plant. With the implementation of this mitigation measure, impacts would be less than significant.

Finally, the City of Patterson and project applicant intend to pursue a Community Facilities District or other financing mechanism similar to the existing Community Facilities District No. 2005-01 for the West Patterson Business Park to fund and implement public infrastructure improvements for the proposed project. The financing mechanism would be overseen by the City of Patterson and would

have the ability to issue bonds for infrastructure improvements and levy assessments against property owners within the district boundaries to repay the bonds. When project buildout triggers the need for the improvements, the City would use the bond proceeds to install the improvements. Mitigation Measure TRANS-1a requires the applicant and the City to establish the financing mechanism prior to recordation on the first final map. This financing mechanism would be the means by which sewer infrastructure is constructed and maintained.

Offsite Utility Alignments

The proposed offsite utility alignments would convey effluent via a force main to a manhole within Sperry Avenue on the east side of the Delta-Mendota Canal and have been sized to serve the proposed project. The potential environmental impacts of the construction and operation of the offsite utility alignments have been addressed in this EIR and mitigation has been proposed as necessary. As such, implementation of the offsite utility alignments would not require the expansion of wastewater treatment capacity and impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure TRANS-1a and:

MM PSU-4 Prior to issuance of building permits for each project building, the applicant shall do one of the following:

- 1) Prepare and submit improvement plans demonstrating that the proposed use(s) would connect to the City of Patterson's municipal wastewater collection and treatment system. The applicant must obtain confirmation that adequate collection and treatment capacity exist to serve the proposed use(s). The applicant shall provide fair-share fees to the City of Patterson for wastewater treatment system improvements through participation in a Community Facilities District or other financing mechanism.
- 2) Prepare and submit improvement plans demonstrating that the proposed use(s) would connect to a privately owned and operated onsite wastewater treatment plant. The applicant must obtain confirmation that adequate collection and treatment capacity exist to serve the proposed use(s). The treatment plant must be fully permitted by the state and County of Stanislaus prior to occupancy of the uses. The project applicant is responsible for the full cost of construction and operation of the onsite wastewater treatment plant.

Level of Significance After Mitigation

Less than significant impact.

Storm Drainage

Impact PSU-5: **The proposed project may require the construction of new downstream drainage facilities.**

Impact Analysis

This impact assesses whether the proposed project would result in the construction of new drainage facilities.

West Patterson Business Park Expansion Project

The proposed project's storm drainage system would consist of underground piping and detention basins that would capture and detain runoff. Pipelines ranging from 12 inches to 72 inches in diameter would convey runoff to nine detention basins within the project site ranging in size from 1.45 to 12.36 acres. In accordance with the City of Patterson's standards, these basins would be sized for a 50-year, 24-hour storm event, which is equivalent to 2.24 inches of rainfall. Two of the detention basins will discharge runoff into storm drain facilities with Rogers Road; while the other six basins will either serve as groundwater recharge facilities (i.e., no offsite discharge) or discharge into Del Puerto Creek. For the latter facilities, discharge into Del Puerto Creek would only occur if subsurface soil studies indicate that the creek can adequately accommodate the runoff for groundwater recharge purposes.

An approximately 19-acre portion of the KDN Retail Center/Business Park adjacent to Rogers Road would discharge runoff to an existing 18-inch storm drain line located within Keystone Pacific Parkway, which ultimately outlets into Salado Creek. During peak storm events, stormwater would be detained onsite in a basin. Once the storm event is over and the City's municipal storm drain system is clear, runoff will be released into the City system at a controlled rate. This design is intended to avoid creating a need for downstream improvements to the City's municipal storm drain system.

As such, the proposed project's storm drainage system would capture and detain runoff, thereby preventing downstream flooding and erosion. To ensure that the proposed project's storm drainage system is appropriately designed and implemented, Mitigation Measure HYD-4 in Section 3.8, Hydrology and Water Quality is proposed requiring the project applicant to submit storm drainage plans to the City of Patterson for review and approval. With the implementation of this mitigation measure, drainage impacts would be reduced to a level of less than significant.

Note that the proposed project would not use or rely upon any existing storm drainage facilities that serve the Villa Del Lago commercial project to the south of the project site and also would not discharge runoff into the Delta-Mendota Canal.

As previously discussed, the City of Patterson and project applicant intend to pursue a Community Facilities District or other financing mechanism similar to the existing Community Facilities District No. 2005-01 for the West Patterson Business Park to fund and implement public infrastructure improvements for the proposed project. The financing mechanism would be overseen by the City of

Patterson and would have the ability to issue bonds for infrastructure improvements and levy assessments against property owners within the district boundaries to repay the bonds. When project buildout triggers the need for the improvements, the City would use the bond proceeds to install the improvements. Mitigation Measure TRANS-1a requires the applicant and the City to establish the financing mechanism prior to recordation on the first final map. This financing mechanism would be the means by which storm drainage infrastructure is constructed and maintained.

Offsite Utility Alignments

Operation of the offsite utility alignments would not create storm drainage. No impacts would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure HYD-4 and Mitigation Measure TRANS-1a.

Level of Significance After Mitigation

Less than significant impact.

Solid Waste

Impact PSU-6:	The proposed project may generate substantial amounts of solid waste during both construction and operations, which would need to be accommodated by a landfill with sufficient permitted capacity.

Impact Analysis

This impact assesses whether the proposed project would be served by a landfill with adequate capacity or would comply with federal, state, and local statutes and regulations related to solid waste.

West Patterson Business Park Expansion Project

Solid waste would be generated by construction and operational activities. Each is discussed below.

Construction Waste Generation

Short-term construction waste generation is summarized in was calculated using an average of 3.89 pounds of debris per square foot of non-residential construction, as provided by the U.S. Environmental Protection Agency and which is an industry standard assumption utilized in determining short-term construction waste generation (Table 3.12-17). The estimate of 36,680 cubic yards was calculated using an average of 3.89 pounds of debris per square foot of non-residential construction, as provided by the U.S. Environmental Protection Agency, and which is an industry standard assumption utilized in determining short-term construction waste generation.

Table 3.12-17: Construction Solid Waste Generation

Activity	Waste Generation Rate	Square Feet	Waste Generation
Construction	3.89 pounds/square foot	13,470,600	26,200 tons 36,680 cubic yards
Notes: 1 ton = 2,000 pounds 1 cubic yard = 1.4 tons Source: U.S. Environmental Protection Agency, 1998; Michael Brandman Associates, 2012.			

Given the amount of construction waste tonnage that would be generated, there is the potential that this could impair the City's ability to meet its state-mandated solid waste targets. As such, mitigation is proposed that would require construction and demolition debris recycling to be implemented. The implementation of this mitigation measure would reduce potential impacts to a level of less than significant.

Operational Waste Generation

Operational solid waste generation estimates were calculated using a standard commercial waste generation rate provided by Cal Recycle. The project's waste generation calculations are provided in Table 3.12-18. As shown in the table, the proposed project is expected to create 45,261 cubic yards of waste annually.

Table 3.12-18: Operational Solid Waste Generation

Waste Generation Rate	Square Feet	Annual Waste Generation
4.8 pounds per square foot per year	13,470,600	32,329 tons 45,261 cubic yards
Notes: 1 ton = 2,000 pounds 1 cubic yard = 1.4 tons Source: Cal Recycle, 2010; Michael Brandman Associates, 2012.		

Table 3.12-18 likely overstates the amount of annual solid waste generation, as the waste generation rate is for commercial uses only, not light industrial uses, which would be lower. Regardless, because there is the potential that the operational waste generation could impair the City's ability to meet its state-mandated solid waste targets, mitigation is proposed that would require the installation recycling facilities prior to issuance of occupancy permits. The implementation of this mitigation measure would reduce solid waste generation and reduce demand for landfill capacity. Therefore, solid waste impacts would be reduced to a level of less than significant.

*Offsite Utility Alignments**Construction Waste Generation*

Construction of the offsite utility alignments would generate construction waste. Implementation of Mitigation Measure PSU-6a would ensure construction waste is minimized and diverted from the waste stream. Therefore, solid waste impacts would be reduced to a level of less than significant.

Operational Waste Generation

Operation of the offsite utility alignments would not produce any solid waste. No impacts would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM PSU-6a Prior to issuance of building permits, the project applicant shall retain a qualified contractor to perform construction debris recycling. The applicant shall establish an objective of diverting a minimum of 50 percent of construction debris from the waste stream. The project applicant shall provide documentation to the satisfaction of the City of Patterson demonstrating that construction and demolition debris was recycled.

MM PSU-6b Prior to the issuance of final certificates of occupancy for each building developed within the West Patterson Business Park Expansion, the project applicant shall provide information to the City of Patterson describing the methods by which recycling and waste diversion activities shall be achieved. This information shall include but is not limited to the type and location of facilities necessary to collect and store recyclable materials, contractors who would pick-up recyclable and reusable materials, and how recycling and waste diversion activities would be integrated into operational practices. To the extent feasible, centralized recycling facilities within each use are encouraged to enhance the ease and efficiency of such practices.

Level of Significance After Mitigation

Less than significant impact.

Energy

Impact PSU-7:	The proposed project would not result in the inefficient, wasteful, or unnecessary use of energy.

Impact Analysis

This impact assesses whether the proposed project would result in the inefficient, wasteful, or unnecessary use of energy.

West Patterson Business Park Expansion Project

TID would provide electrical service and Pacific Gas & Electric Company would provide natural gas service to the proposed project. All electrical and natural gas lines would be located underground. The existing overhead utility lines along Rogers Road would also be relocated underground. The existing overhead high-voltage transmission power lines that parallel the California Aqueduct and serve the TID substation would remain in their current location.

Table 3.12-19 summarizes the estimated annual electricity and natural gas consumption estimates for the proposed project. The demand figures shown in the table are derived from information provided by the United States Energy Information Administration for commercial buildings that operate continuously. As such, these figures likely overstate actual energy consumption, since they include data from states with different climactic characteristics and less stringent energy efficiency requirements than California.

Table 3.12-19: Energy Demand Estimate

Energy Source	Consumption Rate	Square Feet	Estimated Annual Demand
Electricity	15.7 kWh/square foot	13,470,600	211 million kWh
Natural Gas	58.3 cubic feet/square foot		785 million cubic feet
Notes: kWH = kilowatt hours Consumption rates provided by United States Energy Information Agency for buildings that operate continuously. Source: Michael Brandman Associates, 2012.			

TID provided a letter dated October 18, 2011 confirming that it could provide electricity service to the proposed project. PG&E provided a letter dated October 19, 2011 confirming that it could provide natural gas service to the proposed project. Both letters are provided in Appendix G and confirm that both energy providers have adequate supplies and transmission capacity to serve the proposed project, as well as other current and future customers.

The proposed project's structures would be subject to the most recently adopted edition of the Title 24 energy efficiency standards at the time building permits are sought. The Title 24 standards include a number of requirements associated with energy conservation and, therefore, ensure that the proposed project would not result in the inefficient, wasteful, or unnecessary use of energy. As such, impacts would be less than significant.

Offsite Utility Alignments

The offsite utility alignments would not use electricity or natural gas during operation. This precludes the potential for inefficient, wasteful, or unnecessary use of energy. No impact would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

3.13 - Transportation

3.13.1 - Introduction

This section describes the existing transportation setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the West Patterson Business Park Expansion Traffic Study, prepared by TJKM and included in this EIR as Appendix I.

3.13.2 - Environmental Setting

Roadway Network

Exhibit 3.13-1 shows the existing local street circulation in the project area and the study locations. Important roadways in the project vicinity are described below.

Interstate 5

Interstate 5 (I-5) is a four-lane freeway near Patterson. According to the 2010 traffic counts obtained from the Caltrans website, I-5 carries between 35,000 to 41,000 vehicles per day (vpd) in the vicinity of Sperry Avenue. For regional travel, residents rely primarily on I-5, a major north-south freeway to the west of the city limits. I-5 connects to I-580, approximately 15 miles to the north of Patterson. I-5 and I-580 provide access to regional employment centers in Pleasanton, San Ramon, and the rest of the San Francisco Bay Area. The interchange of I-5/Sperry Avenue is configured as a tight diamond with a narrow underpass road and a steep drop in grade next to the northbound on-ramp. All ramps are one lane in each direction.

State Route 33

State Route 33 (SR-33) is located approximately three miles to the east of I-5. SR-33 provides north-south access to Westley to the north and Newman to the south. Its average daily trip (ADT) count is approximately 6,000 vpd. It is the main north-south roadway in Patterson.

Sperry Avenue

Sperry Avenue is a two- to four-lane major arterial roadway that serves as the major route of travel between I-5 to the west and the City of Patterson to the east. Sperry Avenue terminates at SR-33, 3 miles east of I-5. Near the freeway, its ADT is approximately 9,800 vpd.

East Las Palmas Avenue

East Las Palmas Avenue is a three-lane major east west arterial, including a center two-way left-turn lane between SR-33 and Sycamore Avenue, where it narrows to a two-lane road. To the west of SR-33, four streets form a roundabout at Las Palmas Avenue. Most traffic destined for Modesto currently uses Las Palmas Avenue. Its ADT is approximately 9,000 vpd. The name changes to W. Main Street near the San Joaquin River.

Level of Service

Level of Service is a qualitative index of the performance of an element of the transportation system. Level of Service (LOS) is a rating scale running from A to F, with A indicating no congestion of any kind, and F indicating intolerable congestion and delays.

The 2000 Highway Capacity Manual (HCM) is the standard reference published by the Transportation Research Board, and contains the specific criteria and methods to be used in assessing LOS. Several software packages have been developed to implement HCM. In this study, the Synchro software was used to calculate the LOS at the study intersections. A detailed description of the methodology is provided in Appendix I.

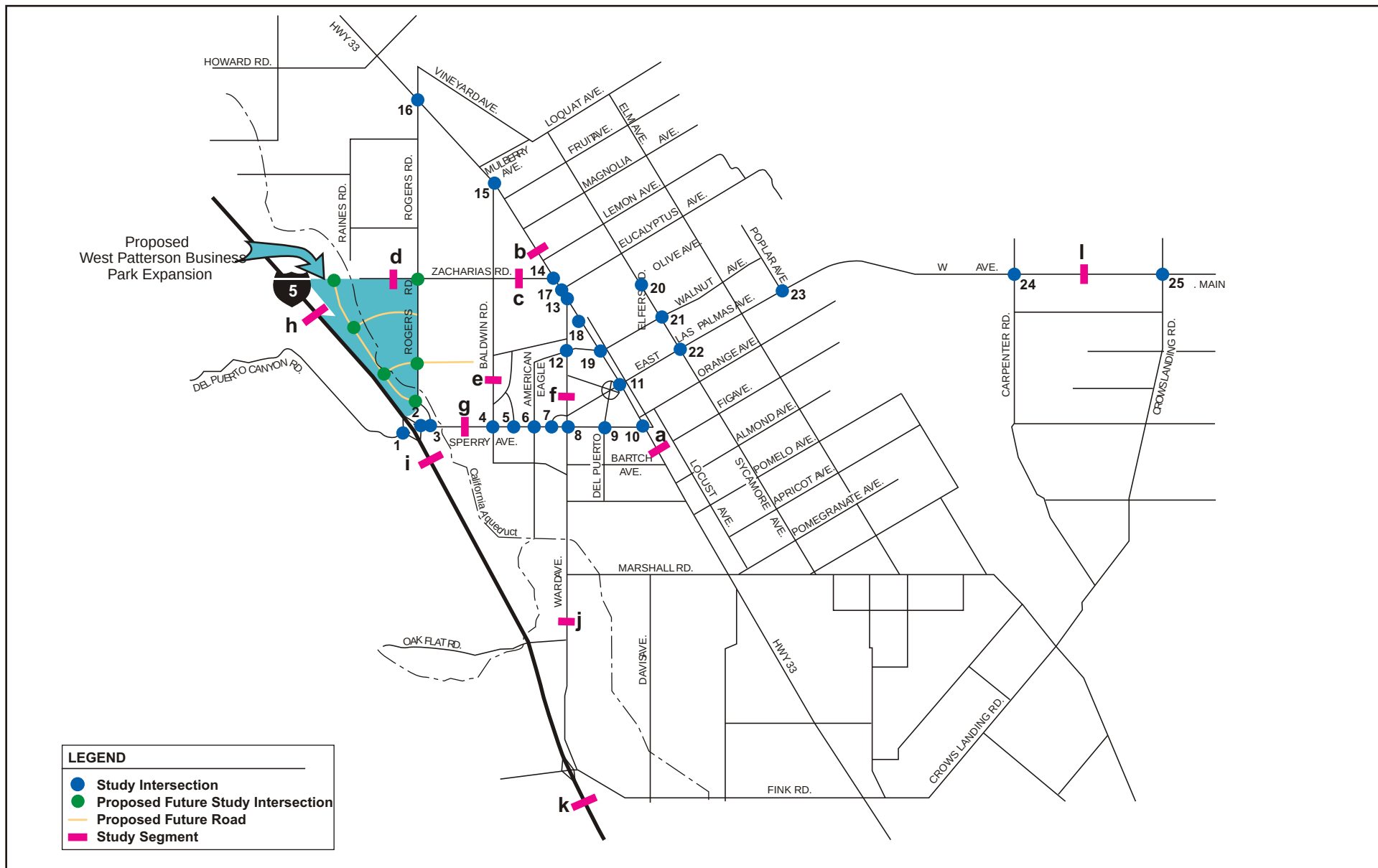
The method of unsignalized intersection capacity analysis used in this study is from Chapter 10, “Unsignalized Intersections” of the Highway Capacity Manual, Special Report No. 209, Transportation Research Board, updated October 2000. This method applies to two-way “Stop” sign- or “Yield” sign-controlled intersections (or one-way “Stop” sign- or “Yield” sign-controlled intersections at three-way intersections). At such intersections, drivers on the minor street are forced to use judgment when selecting gaps in the major flow through which to execute crossings or turning maneuvers. Thus, the capacity of the controlled legs of an intersection is based on three factors:

1. The distribution of gaps in the major street traffic stream
2. Driver judgment in selecting gaps through which to execute their desired maneuvers
3. Follow-up time required to move into the front-of-queue position

The level of service criterion for Two-Way “Stop”-controlled intersections is somewhat different from the criterion used for signalized intersections. The primary reason for this is the difference that drivers expect a signalized intersection to carry higher traffic volumes than unsignalized intersections. Additionally, several driver behavior conditions combine to make delays at signalized intersections less onerous than at unsignalized intersections.

The LOS is reported for the minor approach. Depending on the availability of gaps, the minor approach might be operating at LOS D, E, or F, while the overall intersection operates at LOS C or better. A minor approach that operates at LOS D, E, or F does not automatically translate into a need for a traffic signal. A signal warrant would still need to be met. There are many instances where only a few vehicles are experiencing LOS D, E, or F on the minor approach, while the whole intersection operates at an acceptable LOS. A signal is usually not warranted under such conditions.

The justification for the installation of a traffic signal at an intersection is based on the warrants stated in the California Manual on Uniform Traffic Control Devices (MUTCD) published by Caltrans and the Federal Highway Administration (FHWA). The decision to install a signal should not be based solely upon the warrants, since the installation of traffic signals may increase certain types of collisions.



Source: TJKM Transportation Consultants.



Exhibit 3.13-1 Study Intersections

Delay, congestion, approach conditions, driver confusion, future land use, or other evidence of the need for right-of-way assignment beyond that which could be provided by stop signs must be demonstrated.

Other improvement criteria considered include traffic conditions where a left-turn pocket might be required to safely accommodate projected volumes. For example, because of higher speeds on major streets, it is safer to provide left-turn pockets to channelize heavy left-turning traffic so that the flow of through traffic will not be impeded. This will also provide for safer and better traffic operations on the roadway. For this study, a left-turn pocket will be recommended when the projected left-turn volumes at a major intersection are more than 150 vehicles during the peak hour.

Urban Street Level of Service

The average travel speed for through vehicles along an urban street determines the operating LOS. The travel speed along a segment, section, or entire length of an urban street is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections.

Standards of Significance

The City's 2010 General Plan, Policy III.A.2 states that "The City shall endeavor to maintain a Level of Service (LOS) "D", as defined by the 2000 Highway Capacity Manual (HCM) or subsequent revisions, on all streets and intersections within the City."

County and Caltrans Standards

The minimum acceptable level of service standard for Stanislaus County roadway segments is LOS C. Therefore, this report uses LOS C as the minimum acceptable standard, and mitigation measures are recommended where service levels are below LOS C along roadways within the unincorporated areas of Stanislaus County.

Facilities under the jurisdiction of Caltrans include freeway segments, ramps, ramp terminals, and arterials. Caltrans standards strive to maintain acceptable traffic operations on state facilities between LOS C and LOS D. Mitigation measures are recommended where service levels exceed this LOS C/D transition.

Existing Traffic Volumes and Level of Service Analysis

Based on consultations with the City, 25 intersections and 12 roadway segments have been selected for analysis. The existing turning movement counts and lane geometry are shown in Exhibit 3.13-2. Ten intersections are currently signalized. The intersection levels of service analysis results are shown in Table 3.13-1. Detailed calculations are shown in Appendix I.

Table 3.13-2 shows the arterial levels of service under existing conditions. Currently, all arterial segments operate acceptably during the AM and PM peak hours. The freeway levels of service under

existing conditions are shown in Table 3.13-3. Currently, all three freeway segments operate acceptably during the peak hour.

Table 3.13-1: Intersections Level of Service – Existing Conditions

No.	Intersection	Existing Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Sperry Avenue/I-5 SB Ramps	One-Way Stop	11.5	B	32.1	D
2	Sperry Avenue/I-5 NB Ramps	One-Way Stop	10.0	A	13.4	B
3	Sperry Avenue/Rogers Road	Signal	6.8	A	6.4	A
4	Sperry Avenue/Baldwin Road	Signal	27.4	C	17.0	B
5	Sperry Avenue/Walker Parkway	Signal	5.3	A	5.0	A
6	Sperry Avenue/American Eagle Drive	Signal	22.9	C	17.3	B
7	Sperry Avenue/Las Palmas Avenue	Signal	6.2	A	6.3	A
8	Sperry Avenue/Ward Avenue	Signal	23.9	C	24.3	C
9	Sperry Avenue/S Del Puerto Avenue	Signal	8.2	A	7.4	A
10	Sperry Avenue/SR-33	Two-Way Stop	17.1	C	20.5	C
11	SR-33/Las Palmas Avenue	Signal	20.3	C	21.6	C
12	Ward Avenue/American Eagle Drive	Signal	12.5	B	17.5	B
13	Ward Avenue/SR-33	One-Way Stop	12.3	B	14.3	B
14	Zacharias Road/SR-33	One-Way Stop	9.4	A	10.7	B
15	Baldwin Road/SR-33	One-Way Stop	10.7	B	14.7	B
16	Rogers Road/SR-33	One-Way Stop	11.9	B	13.5	B
17	SR-33/Eucalyptus Avenue	One-Way Stop	11.8	B	12.0	B
18	Olive Avenue/SR-33	Two-Way Stop	11.4	B	17.3	C
19	Walnut Avenue/M Street/SR-33	Signal	5.7	A	5.6	A
20	Olive Avenue/Sycamore Avenue	All-Way Stop	7.1	A	7.3	A
21	Walnut Avenue/Sycamore Avenue	Two-Way Stop	9.3	A	9.8	A
22	Las Palmas Avenue/Sycamore Avenue	All-Way Stop	16.0	C	25.1	D
23	Poplar Avenue/Las Palmas Avenue	One-Way Stop	13.6	B	28.1	D
24	Carpenter Road/West Main Avenue	All-Way Stop	13.4	B	14.7	B
25	Crows Landing Rd/West Main Avenue	All-Way Stop	13.1	B	17.1	C
Source: TJKM, 2012.						



Source: TJKM Transportation Consultants, April 2012.

Table 3.13-2: Arterial Level of Service – Existing Conditions

No.	Roadway Segment	Lanes (Directional)	Peak Hour		
			Volume (Vehicles)	Speed (mph)	LOS
A	SR-33, south of Sperry Avenue	1	8,160	27.6	C
B	SR-33, north of Zacharias Road	1	8,580	25.6	D
C	Zacharias Road, west of SR-33	1	780	32.4	B
D	Zacharias Road, west of Rogers Road	1	780	32.4	B
E	Baldwin Road, north of Sperry Avenue	1	2,400	23.8	C
F	Ward Avenue, north of Las Palmas Avenue	1	4,250	24.3	B
G	Sperry Avenue, end of Rogers Road	2	6,010	29.3	B
J	Ward Avenue, south of Marshall Road	1	3,080	29.6	B
L	Main St., end of Carpenter Road	1	5,090	32.3	B
Source: TJKM, 2012.					

Table 3.13-3: Freeway Level of Service – Existing Conditions

No.	Roadway Segment	Peak Hour			
		Lanes (Directional)	Volume	Density (pc/mi/ln)	LOS
H	I-5, north of Sperry Avenue	2	2,790	22.6	C
I	I-5, south of Sperry Avenue	2	2,340	18.9	C
K	I-5, south of Fink Road	2	3,000	24.6	C
Source: TJKM, 2012.					

Public Transit

Stanislaus Regional Transit (StaRT) provides fixed-route bus, shuttles, runabout, and dial-a-ride service within Stanislaus County. Relevant services are summarized on the following pages.

Fixed Route Bus Service

StaRT operates six fixed bus routes, two of which serve the Patterson area (Routes 40 and 45). Routes 40 and 45 are summarized in Table 3.13-4.

Table 3.13-4: Bus Route Summary

No.	Destinations	Nearest Stop	Hours of Operation
40	Modesto, Grayson, Westley, Patterson	Salado Avenue/ Las Palmas Avenue	Weekdays: 5:25 a.m. to 8:45 p.m. Saturday: 6:40 a.m. to 7:15 p.m.
45	Patterson, Crows Landing, Newman, Gustine, Turlock	Ward Avenue/Salado Avenue	Weekdays: 5:30 a.m. to 7:25 p.m. Saturday: 5:55 a.m. to 7:15 p.m.
Note: Sunday service is not provided on either Route 40 or Route 45. Source: Stanislaus Regional Transit, 2012.			

Dial-A-Ride

StaRT operates Patterson Dial-A-Ride service within the Patterson area. Service is provided on weekdays from 7:00 a.m. to 12:00 p.m. and 1:00 p.m. to 6:00 p.m., and on Saturday from 8:00 a.m. to 12:00 p.m. and 1:00 p.m. to 4:30 p.m.

Bicycles

As set forth in the Caltrans Highway Design Manual, bicycle facilities are classified as follows:

- Class I Bikeway (Bike Path). Provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.
- Class II Bikeway (Bike Lane). Provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Vehicle parking and vehicle/pedestrian crossflow are permitted.
- Class III Bikeway (Bike Route). Provides for a right-of-way designated by signs or pavement markings for shared use with pedestrians or motor vehicles.

A Class I facility exists along the California Aqueduct.

The Class II facilities are generally found along the downtown portion of the existing urbanized area. These facilities are found along parts of Las Palmas Avenue, Baldwin Road, American Eagle, and 'M' Street.

The Class III Bike Route network is most prevalent in the Central Patterson area. However, there are gaps in the bike routes. Because of these gaps, it is not possible to fully traverse the City traveling north to south or east to west using the designated bicycle network.

Pedestrians

Pedestrian facilities in the project vicinity are limited to sidewalks located within the Villa del Lago commercial development. There are no sidewalks along any of the street frontages that adjoin the project site.

Aviation

Patterson Airport

The Patterson Airport is located approximately 0.5 mile east of the project site. The airport is privately owned and supports small agricultural aircraft and, on occasion, small recreational aircraft.

Land use within the Patterson Airport Land Use Planning Area is subject to the recommendations of the Stanislaus County Airport Land Use Commission Plan. The project site is located in Conditions Area 4 (“Other Land within the Airport Planning Boundary”) of the Airport Land Use Planning Area. As established by the Airport Land Use Commission Plan, all commercial and industrial land uses are classified as “Compatible” within Conditions Area 4.

Rail

Patterson is served with freight rail service by the California Northern Railroad, a short-line railroad that operates the former Southern Pacific “West Side Line” between Tracy and Los Banos. The California Northern interchanges freight cars with the Union Pacific Railroad in Tracy. Service typically consists of a daily round trip between Tracy and Los Banos. No passenger service occurs on this line.

3.13.3 - Regulatory Framework

State

State Aeronautics Act

The State Aeronautics Act requires each county with an airport to establish an Airport Land Use Commission to guide development and land use activities around airports, in order to protect public safety and ensure that land uses near airports do not interfere with aviation operations. The Stanislaus County Airport Land Use Commission regulates land use around the Patterson Airport by requiring compliance with the Stanislaus County Airport Land Use Commission Plan. In certain circumstances, local governments have the ability to override the decisions of the Airport Land Use Commission.

Regional

Regional Transportation Plan

The Regional Transportation Plan (RTP) establishes regional transportation policy for Stanislaus County. The RTP focuses on achieving a coordinated and balanced multimodal transportation system, while maintaining the integrity of the existing system. The RTP includes projects located throughout Stanislaus County for all forms or modes of transportation, including automobiles, transit, nonmotorized (including bicycle), passenger rail, freight, and aviation facilities. The RTP reflects a fiscally constrained environment and identifies those projects (considered Tier 1 projects) that have a secure or approved funding source.

Stanislaus County Congestion Management Process

The Stanislaus Council of Governments adopted the 2009 Congestion Management Process for the Stanislaus County Region (CMP) in January 2010, which addresses regional transportation planning requirements set forth by federal and state governments. The CMP establishes objectives for

reducing traffic congestion and designates a network of transportation facilities that are subject to prescribed performance standards. Within the Patterson area, I-5, SR-33, and Ward Avenue are designated CMP facilities. The CMP establishes a minimum performance standard of LOS E; however, both the City of Patterson's minimum performance standard (LOS C) and Caltrans's minimum performance standard (the transition between LOS C and D) supersede the CMP standard because they require a higher minimum LOS to be maintained.

Local

City of Patterson

General Plan

The General Plan establishes the following goals and policies relevant to transportation:

- **Goal T-1:** Street design and access standards shall provide for safe and efficient movement of goods and people. Restrictive traffic control measures (such as channelization, street closures, and prohibition of some traffic movements) shall be used where appropriate to promote traffic safety and efficient traffic operation.
- **Policy T-1.2:** The City shall endeavor to maintain a minimum Level of Service "D," as defined by the 2000 Highway Capacity Manual or subsequent revisions, on all streets and intersections within the city. To identify the potential impacts of new development on traffic service levels, the City shall require the preparation of traffic impact analyses at the sole expense of the developer for developments determined to be large enough to have potentially significant traffic impacts. This standard does not apply to freeways which are governed by the standards established by Caltrans.
- **Policy T-1.3:** The City shall implement a hierarchical street system in which each street serves a specific, primary function and is sensitive to the context of the land uses served. The hierarchy of streets shall be based on the existing one square mile backbone grid system of streets along section lines and the traditional circulation pattern established in the City's downtown. Development of residential neighborhoods within the backbone grid may employ a more circuitous street pattern with cul-de-sacs, traffic circles, roundabouts and other traffic calming features to help reduce traffic speeds.
- **Policy T-1.4:** Streets shall be dedicated, widened, extended, and constructed based on the roadway classifications/definitions and street sections provided in the City's roadway improvement standards and Street Master Plan (see implementation measure T-2). Dedication and improvements of full rights-of-way shall not be required in existing developed areas where the City determines that such improvements are either infeasible or undesirable. Other deviations from these standards shall be permitted upon a determination by the City Engineer that safe and adequate public access and circulation are preserved by such deviations.
- **Policy T-1.5:** Neighborhood streets shall be designed, where feasible, to discourage unsafe traffic speeds.
- **Policy T-1.6:** The City shall promote efforts of Stanislaus County, StanCOG and other stakeholders in the development of the South County Corridor to connect W. Main Avenue to Interstate 5. The City's preference for the alignment of the South County Corridor is shown on

the Circulation Plan (Figure II-4 of Chapter II. Land Use/Circulation Diagrams and Standards). However, the final alignment should be decided through a cooperative effort among stakeholders, and informed by a comprehensive feasibility study that assesses at least the following:

- The appropriate right-of-way width and location;
 - Environmental and regulatory constraints, especially as they relate to agricultural and biological resources;
 - The need for, and economic/environmental feasibility of, constructing a second bridge over the San Joaquin River;
 - An estimate of relevant costs; and
 - An analysis of alternatives;
- **Policy T-1.7:** The City shall establish a roadway connection between Sperry Avenue and East Las Palmas to divert east-west through traffic from the downtown area.
 - **Policy T-1.8:** The primary purpose of streets outside the downtown is the movement of vehicles and goods; parking shall be a secondary and subordinate use only. If travel demands dictate, on-street parking may be removed on streets that serve primarily non-residential development to increase traffic-carrying capabilities.
 - **Policy T-1.9:** Industrial and commercial development shall be planned so that truck access through residential areas is avoided.
 - **Policy T-1.10:** The City shall ensure through a combination of traffic impact fees and other funding mechanisms that new development fully mitigates its impact on traffic facilities by paying its share of the costs of circulation improvements. New development shall pay a proportional share of costs of required improvements necessitated by the new development.
 - **Policy T-1.11:** The City shall discourage the development of private streets in new residential projects. Where private streets are allowed, they shall be constructed to City street standards.
 - **Policy T-1.12:** Traffic calming techniques, including roundabouts, traffic circles, ‘chokers’ and chicanes, shall be considered as an alternative to traditional intersection controls. Where cul-de-sacs are employed, consideration should be given to establishing connections between the cul-de-sac and other streets, parks, bicycle paths and pedestrian trails.
 - **Policy T-1.13:** The City shall investigate the construction of a new interchange at Interstate 5 north of Sperry Avenue in the vicinity of Zacharias Road.
 - **Policy T-1.14:** The City shall ensure to the extent feasible that pedestrian, bicycle, and automobile connections are maintained in existing neighborhoods affected by transportation and other development projects.
 - **Goal T-2:** To promote and maintain public and private transit systems that are responsive to the needs of Patterson residents.
 - **Policy T-2.1:** The City shall work to assure that West Side Dial-a-Ride service is responsive to local needs.
 - **Policy T-2.2:** The City shall work with the County to maintain a van/minibus transportation system tailored to the needs of the elderly and disabled, which can be expanded in the future.

- **Goal T-3:** To promote increased efficiency in automobile use.
- **Policy T-3.1:** The City shall encourage and support programs which will increase ridesharing.
- **Policy T-3.2:** The City shall cooperate with Caltrans in the development of park-and-ride facilities near Interstate 5 shall ensure park-and-ride facilities are allowed in appropriate zoning districts.
- **Goal T-4:** To consider air quality and noise impacts along with traffic flow efficiency when making decisions about improvements to existing roadways or the construction of new roadways.
- **Policy T-4.1:** To the extent feasible, the City shall provide for separation of residential and other noise-sensitive land uses from major roadways to reduce noise and air pollution impacts from traffic.
- **Goal T-5:** To promote intergovernmental communication and cooperation concerning transportation-related issues.
- **Policy T-5.1:** The City shall continue to participate in state, regional, and local transportation planning efforts to ensure coordination of the expansion and improvement of the region's transportation system.
- **Policy T-5.2:** The City shall continue to develop formal and informal lines of communication among adjacent jurisdictions to ensure cooperation in the development of transportation systems that cross jurisdictional boundaries.
- **Goal T-6:** To ensure the adequate provision of both on- and off-street parking.
- **Policy T-6.1:** If future growth in traffic volumes necessitates removal of on-street parking places to provide additional traffic lanes, the City shall ensure that the lost on-street spaces are replaced with an equal number of off-street spaces within the same vicinity, when feasible. Parking lots contiguous to downtown streets should not be sited at intersections but rather sited in mid-block locations.
- **Policy T-6.2:** The City shall require provision of adequate off-street parking in conjunction with all new developments. Parking shall be located convenient to new development and shall be easily accessible from the street system. The adequacy and appropriateness of parking requirements in the Zoning Ordinance shall be periodically reevaluated.
- **Policy T-6.6:** On-street truck parking shall be prohibited where such parking restricts adequate sight distances or otherwise poses a potentially hazardous situation.
- **Goal T-7:** To promote pedestrian, bicycle and rail travel as alternatives to automobile use.
- **Policy T-7.1:** The City shall create and maintain a safe and convenient system of pedestrian and bicycle pathways that encourages walking and bicycling as an alternative to driving. New development shall be required to pay its fair share of the costs for development of this pathway system.
- **Policy T-7.2:** All new development shall be reviewed to ensure safe pedestrian access is provided from the street, within parking areas and between new development and surrounding neighborhoods.
- **Policy T-7.3:** The City shall establish a safe and convenient network of identified bicycle routes connecting new residential areas by the shortest possible routes with recreation, shopping, and employment areas within the city. The City shall cooperate with surrounding jurisdictions in designing and implementing an area-wide bikeway system.

- **Policy T-7.4:** Bicycle routes shall emphasize paths separated from vehicle traffic (Class I) to the maximum extent possible, but shall also include bicycle lanes within public streets (Class II and III). The City shall limit on-street bicycle routes to those streets where the available roadway width and traffic volumes permit safe coexistence of bicycle and motor vehicle traffic.
- **Policy T-7.5:** To the extent practicable, bicycle and pedestrian pathways shall be included within open space areas.
- **Policy T-7.6:** The City shall require the inclusion of bicycle parking facilities at all new major public facilities and commercial and employment sites and shall encourage large employers to provide showers for employees.
- **Policy T-7.7:** The City shall promote the safe “sharing” of roads between automobiles and bicyclists.
- **Policy T-7.8:** Bicycle safety shall be considered when implementing improvements for automobile traffic operations.
- **Policy T-7.10:** The City shall coordinate with Stanislaus County, the Stanislaus Council of Governments, Caltrans and other agencies to improve bicycle and pedestrian circulation region-wide.
- **Policy T-7.11:** The City shall promote the establishment of commuter rail service between Patterson and the San Francisco Bay area, Sacramento and other metropolitan areas.
- **Goal T-8:** To take an active role in any changes in use patterns of airports within the vicinity of Patterson.
- **Policy T-8.1:** The City shall continue to ensure that amendments to the General Plan are consistent with applicable adopted Airport Land Use Plans.

Improvement Funding Programs

The City of Patterson has specific policies in the City’s General Plan and funding programs to ensure the City develops and manages the roadway system to maintain LOS D or better during the peak hour for intersections and roadways in the City. The City programs and funds improvements to its circulation network through the Capital Improvement Program in the City’s annual budget. Through the Capital Improvement Program, the City allocates funds to construct improvements as needed to maintain the Level of Service defined in the Circulation Element of the General Plan. Sources of funding for improvements to the City’s circulation network include its transportation impact fee, federal and state gas tax revenues, and grants.

Principal funding programs that provide transportation improvement funding in the City of Patterson include its Impact Fee Program and the State Transportation Improvement Plan (STIP) Program. Both of these programs are briefly described below.

City of Patterson Impact Fee Program

Under the City of Patterson’s Impact Fee Program, fees are charged to new developments based on the size of the proposed construction (for example, units of residential or square footage of non-residential). This program provides a source of funds dedicated for a wide range of municipal

facilities, which includes numerous fee categories. The Traffic/Road Improvement fee category provides funding for transportation improvement projects within the City to implement the 2030 General Plan Circulation Element by providing for the acceptable operation of intersections upon buildout of the General Plan. Buildout of the City's General Plan will require capacity improvements to transportation facilities (intersections and roadway segments) to support the increased demand. In terms of timing, the City has interpreted its General Plan to require that the public facilities necessary to accommodate such new development be provided concurrently or in advance of such development. The total costs of the transportation improvements, which were identified in the West Patterson Projects Final EIR, were used to calculate transportation impact fees based on estimated trips generated at buildout of the General Plan.

Monies collected through the Impact Fee Program become special revenue funds, which must be expended on transportation projects identified in the Impact Fee Study. As such, when a traffic impact study on a development project identifies impacts to intersections included in the Impact Fee Study, and those impacts that would result from that project's traffic, the mitigating improvements to address those impacts have already been included in the capital improvements identified for those intersections, and payment of impact fees by the project developer will typically constitute full mitigation for intersection impacts. Pursuant to the General Plan, the City's Capital Improvement Program must be updated on a periodic basis to ensure that improvements adequately address cumulative traffic conditions as they may evolve over time. To help assess these conditions and identify the necessary short-term and mid-term roadway improvements, the City has initiated a Traffic Monitoring Program, also to be updated periodically to assess short-term and mid-term circulation needs. The first results from the Traffic Monitoring Program, published in 2008, evaluated nearly every intersection in the City's Impact Fee Study, and made recommendations on improvements over a 2-, 4-, and 6-year time horizon.

The I-5/Sperry Avenue Interchange project, which proposes to increase capacity along Sperry Avenue and the freeway on-ramps to accommodate future growth, is included in the Impact Fee Program. The Stanislaus Council of Governments' (StanCOG's) Travel Demand Model was used to calculate the percentage of future traffic growth through the I-5/Sperry Avenue Interchange attributable to the various land use categories (e.g., business park, commercial, residential). The impact fees necessary to construct the improvements were then allocated to the various land use categories based on their percent contribution to the total peak-hour trips through the interchange. The City will assess these fees to future developments according to its land use category.

State Transportation Improvement Plan

The STIP is a multi-year capital improvement program of transportation projects on and off the State Highway System, funded with revenues from the Transportation Investment Fund and other state funding sources. Improvement projects that provide regionwide significance are nominated by local agencies and regional transportation planning agencies such as StanCOG.

The I-5/Sperry Avenue interchange project is eligible for STIP funding, which, if made available, would offset a portion of the improvement costs for the interchange improvements. Pending approval, these funds would significantly minimize transportation impact fees assessed to future development.

West Patterson Financing Authority

The West Patterson Financing Authority was formed by the City of Patterson in 2001 to fund and implement necessary public infrastructure improvements in conjunction with new development on the west side of Patterson. The Patterson City Council acts as the West Patterson Financing Authority Board of Directors. The West Patterson Financing Authority established Community Facilities District No. 2001-01 (Public Improvements) in 2001 and Community Facilities District No. 2005-01 (West Patterson Business Park) in 2005. The boundaries of Community Facilities District No. 2001-01 generally encompass the residential development between Baldwin Avenue and Ward Avenue, and the boundaries of Community Facilities District No. 2005-01 encompass the 820-acre West Patterson Business Park. The West Patterson Financing Authority issued approximately \$73 million in Special Tax Bonds since 2002 to fund improvements. Special tax levies are assessed to properties with the Community Facilities Districts to repay the bonds.

3.13.4 - Methodology

TJKM prepared a traffic study for the proposed project, which is provided in its entirety in Appendix I. The traffic study was prepared on the basis of discussions with and criteria set forth by the City of Patterson. The City participated in the review of the scope of work for this study. The study addressed the traffic and transportation effects of the proposed development in order to assist the project applicant and the City in project planning and determining conditions of approval for the project.

Traffic Demand Model

A long-range traffic-forecasting model was used to assess the impact of the proposed project. The StanCOG countywide gravity-based model was used in the study.

The StanCOG model is used for the Stanislaus County RTP. The StanCOG modeling area is the whole region where the StanCOG model operates. It is assumed that this model provides a reasonable travel pattern, including the Origin-Destination demands and the route choices among the different areas within the areas.

TJKM developed a validated AM and PM peak-hour model from the StanCOG model for the City of Patterson. In consultation with StanCOG staff, TJKM updated the model for the study. A detailed model calibration was made based on the counts collected at the study intersections and study roadway segments. Detailed Traffic Analysis Zones (TAZs) are used to represent geographical locations in the model. Trips are generated at the TAZ level and distributed onto the roadway network.

Model calibration is a process to adjust the model estimate to the existing traffic condition as reflected in the traffic counts. Demand forecasting models need to be demonstrably reliable and credible after the model calibration before being used for analysis on a project. A central point of

many public hearings and meetings concerning city and private plans and projects focus is the credibility of the forecasting model. Therefore, it is important that the analysis tools used are accurate, reliable, and transparent, so that the real issues related to impacts and solutions can be properly understood and addressed. The calibration effort of the Patterson model was pursued with this goal in mind. Since the R2 (which is a measure of the accuracy of the traffic estimates) is nearly 0.9 after model calibration (versus 0.5 or less before calibration), it can be concluded that TJKM has calibrated the model to a very high level of accuracy.

After the model was calibrated, the difference method 2 was used to obtain future link level and intersection turning movement volumes based on the calibrated OD matrices. These volumes were used to calculate the level of service for the study intersections in this project. Detailed model calibration information is contained in Appendix I.

Study Scenarios

The traffic scenarios studied included the following:

- Existing
- Existing Plus Phase I Project Conditions
- Year 2035 No Project Cumulative Conditions
- Year 2035 Base Year Plus Project Conditions

Project Phasing

The proposed project is expected to be built out in multiple phases over a period of 20 to 30 years. Economic conditions will dictate the exact timing and characteristics of each phase. Table 3.13-5 provides a conservative “worst-case” phasing summary used in this analysis. It is anticipated that nearly 45 percent of the project would be completed in Phase I.

Table 3.13-5: Project Phasing

Phase	Characteristics	Size (Square Feet)	Percent of Project	First Year of Anticipated Buildout
1	General Commercial	1,089,700	44	2023
	Business Park/Light Industrial	4,849,800		
2	Business Park/Light Industrial	3,602,400	27	2028
3	General Commercial	306,000	25	2031
	Business Park/Light Industrial	3,031,550		
4	Business Park/Light Industrial	591,150	4	2032
Total		13,470,600	100	—
Source: GDR Engineering, 2012; TJKM, 2012.				

Trip Generation

Trip generation is defined as the number of “vehicle trips” produced by a particular land use or project. A trip is defined as a one-direction vehicle movement. The total number of trips generated by each land use includes the inbound and outbound trips. The model estimated trips were distributed onto the street network.

For comparison, the trip generation estimates for the proposed project were calculated using the standard reference, Trip Generation, 8th Edition, published by the Institute of Transportation Engineers (ITE). Because the proposed project would be phased over a 20- to 30-year period, trip generation was calculated separately for Phase I and the total project.

The estimated potential trip generation of Phase I of the proposed project is summarized in Table 3.13-6.

Table 3.13-6: Phase I Trip Generation

Land Use (ITE Code)	Size (1000 square feet)	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Shopping Center (820)	1,089.7	300	192	492	1,343	1,286	2,629
Light Industrial (110)	4,543.5	3,678	502	4,180	529	3,878	4,407
Industrial Business Park (130)	306.0	211	46	257	55	208	263
Total	—	—	—	4,929	—	—	7,299
Source: TJKM, 2012.							

The estimated potential trip generation of the total project is summarized in Table 3.13-7.

Table 3.13-7: Total Project Trip Generation

Land Use (ITE Code)	Size (1000 square feet)	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Shopping Center (820)	1,396	445	284	729	1,823	1,897	3,720
Light Industrial (110)	11,038	8,936	1,219	10,155	1,285	9,422	10,707
Industrial Business Park (130)	1,037	714	157	871	187	705	892
Total	13,471	—	—	11,755	—	—	15,319
Source: TJKM, 2012.							

The proposed project trip distribution is shown on Exhibit 3.13-3.

3.13.5 - Thresholds of Significance

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

- a) Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
- b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?
- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- e) Result in inadequate emergency access?
- f) Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

3.13.6 - Project Impacts and Mitigation Measures

Existing Plus Phase I Traffic

Impact TRANS-1: The proposed project may contribute to unacceptable traffic operations under Existing Plus Phase I conditions.

Impact Analysis

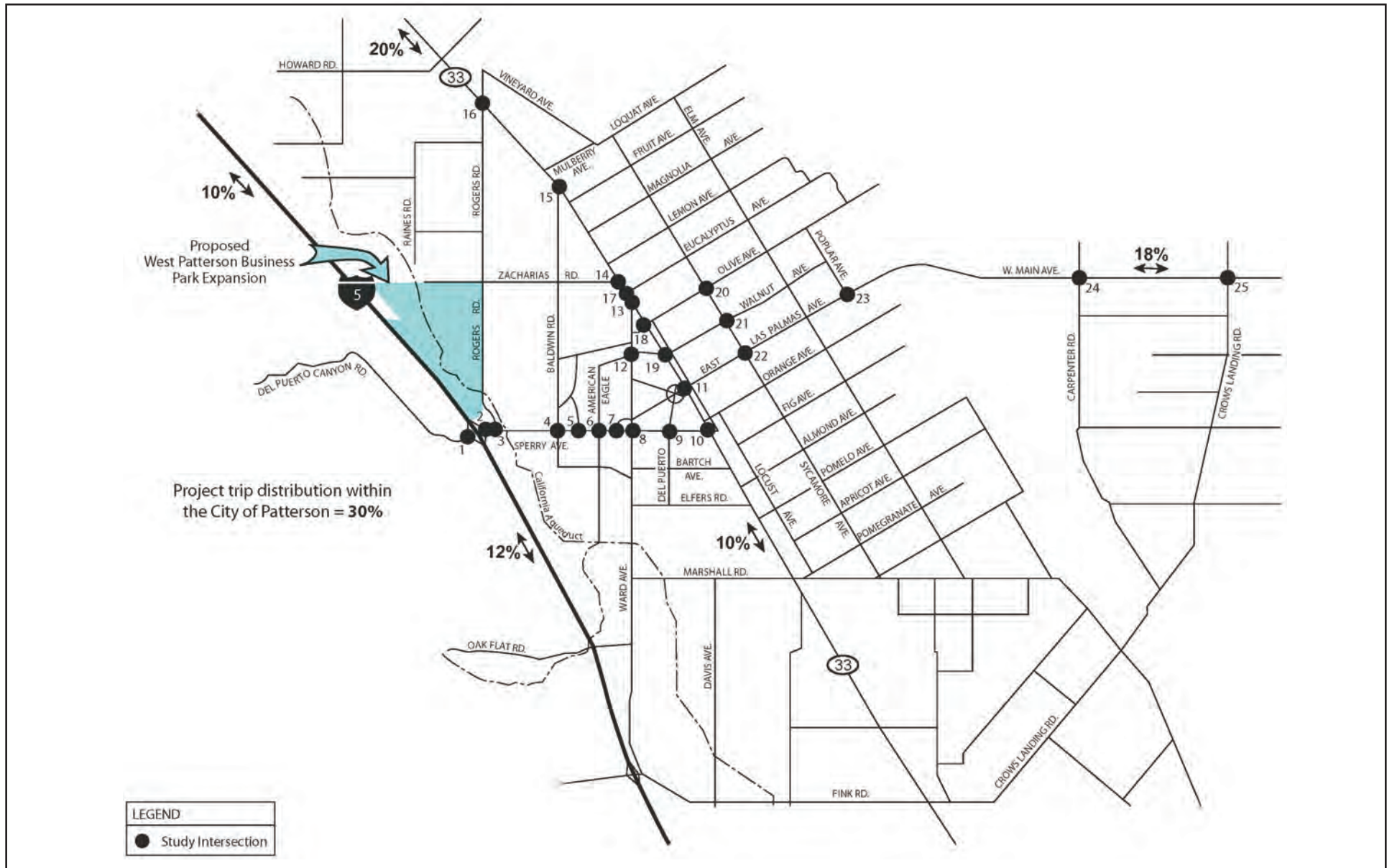
This impact will assess the potential for the proposed project to contribute to unacceptable traffic operations under Existing Plus Phase I conditions. In this scenario, approximately 50 percent of the project would be built.

West Patterson Business Park Expansion Project

Intersection Operations

Exhibit 3.13-4 shows the Existing Plus Phase I Project peak-hour turning movement volumes and lane geometry. Six intersections will operate at LOS E/F and signals would be required. With the identified improvements, all study intersections are expected to operate acceptably in this scenario.

Table 3.13-8 shows the results of the intersection level of service in this scenario. Detailed calculations are shown in Appendix I.



Source: TJKM Transportation Consultants, April 2012.

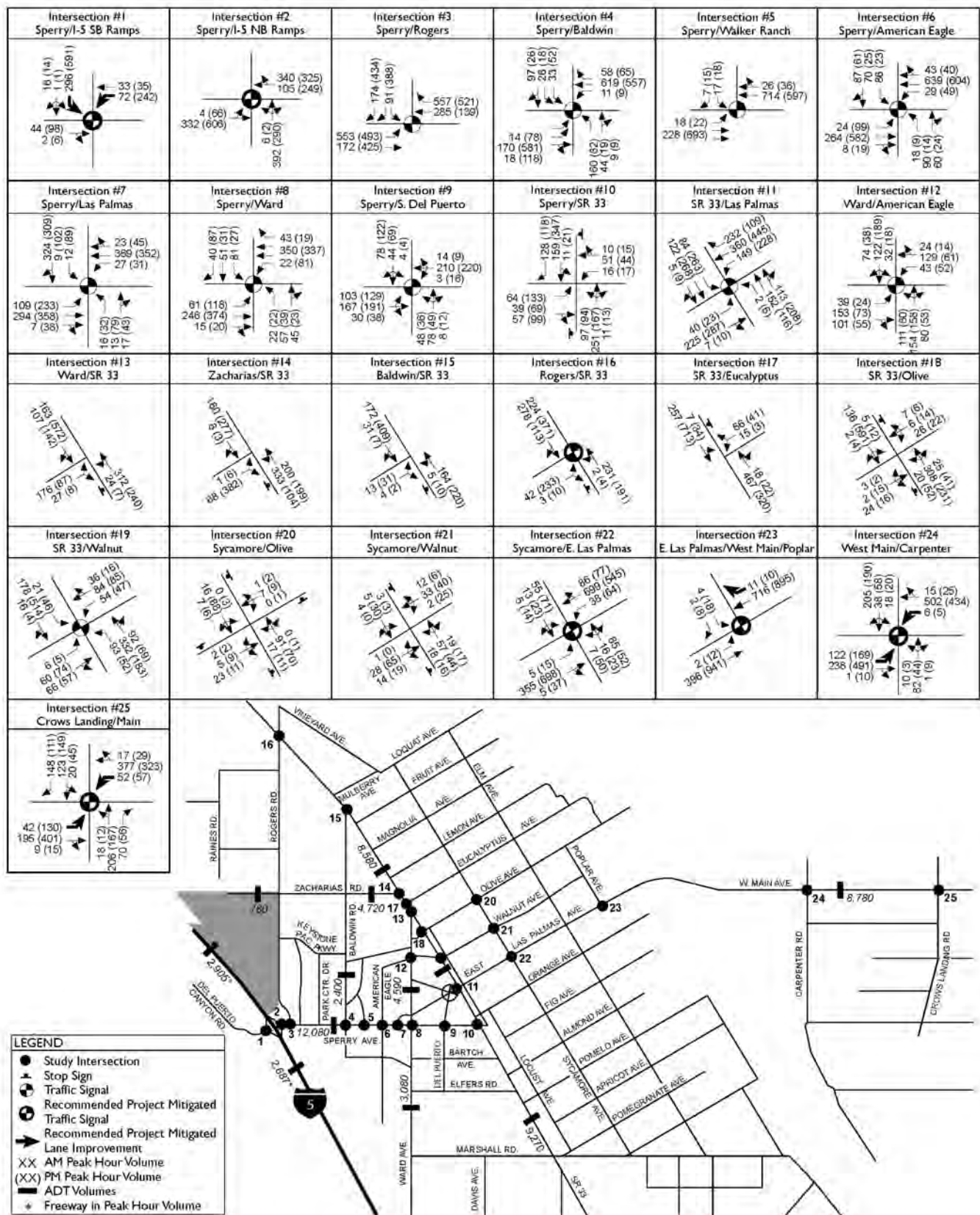


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Exhibit 3.13-3 Project Trip Distribution

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Source: TJKM Transportation Consultants, April 2012.



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Exhibit 3.13-4

Existing Plus Phase I Peak Hour Turning Movement Volumes, Lane Geometry, and Controls

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT

Table 3.13-8: Intersection Levels of Service – Existing Plus Phase I Conditions

No.	Intersection	Existing Plus Phase I					Mitigated Existing Plus Phase I				
		Existing Control	AM		PM		Future Control	AM		PM	
			Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
1	Sperry Avenue/I-5 Southbound Ramps	One-way stop	15.0	C	120.0	F	Signal	5.6	A	9.0	A
2	Sperry Avenue/I-5 Northbound Ramps	One-way stop	19.3	C	29.0	D	Signal	7.4	A	10.1	B
3	Sperry Avenue/Rogers Road	Signal	9.1	A	14.2	B	Signal	9.1	A	14.2	B
4	Sperry Avenue/Baldwin Road	Signal	24.6	C	21.8	C	Signal	24.6	C	21.8	C
5	Sperry Avenue/Walker Parkway	Signal	4.9	A	5.1	A	Signal	4.9	A	5.1	A
6	Sperry Avenue/American Eagle Drive	Signal	22.4	C	17.5	B	Signal	22.4	C	17.5	B
7	Sperry Avenue/Las Palmas Avenue	Signal	5.9	A	8.0	A	Signal	5.9	A	8.0	A
8	Sperry Avenue/Ward Avenue	Signal	23.1	C	24.4	C	Signal	23.1	C	24.4	C
9	Sperry Avenue/S. Del Puerto Avenue	Signal	8.1	A	7.1	A	Signal	8.1	A	7.1	A
10	Sperry Avenue/SR-33	Two-way stop	19.9	C	34.5	D	Two-way stop	19.9	C	34.5	D
11	SR-33/Las Palmas Avenue	Signal	18.0	B	41.5	D	Signal	18.0	B	41.5	D
12	Ward Avenue/American Eagle Drive	Signal	16.4	B	11.8	B	Signal	16.4	B	11.8	B
13	Ward Avenue/SR-33	One-way stop	19.4	C	24.6	C	One-way stop	19.4	C	24.6	C
14	Zacharias Road/SR-33	One-way stop	9.8	A	16.7	C	One-way stop	9.8	A	16.7	C
15	Baldwin Road/SR-33	One-way stop	10.7	B	14.7	B	One-way stop	10.7	B	14.7	B
16	Rogers Road/SR-33	One-way stop	14.1	B	27.1	D	Signal	3.1	A	8.2	A
17	SR-33/Eucalyptus Avenue	One-way stop	13.7	B	11.7	B	One-way stop	13.7	C	11.7	B
18	Olive Avenue/SR-33	Two-way stop	14.0	B	27.8	D	Two-way stop	14.0	B	27.8	D
19	Walnut Avenue/M Street/SR-33	Signal	6.1	A	5.8	A	Signal	6.1	A	5.8	A
20	Olive Avenue/Sycamore Avenue	All-way stop	7.5	A	7.6	A	All-way stop	7.5	A	7.6	A

Table 3.13-8 (cont.): Intersection Levels of Service – Existing Plus Phase I Conditions

No.	Intersection	Existing Plus Phase I					Mitigated Existing Plus Phase I				
		Existing Control	AM		PM		Future Control	AM		PM	
			Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
21	Walnut Avenue/ Sycamore Avenue	Two-way stop	9.8	A	10.4	B	Two-way stop	9.8	A	10.4	B
22	Las Palmas Avenue/ Sycamore Avenue	All-way stop	110.6	F	120.0	F	Signal	8.5	A	9.0	A
23	Poplar Avenue/ Las Palmas Avenue	One-way stop	20.3	C	65.3	F	Signal	6.2	A	8.2	A
24	Carpenter Road/ West Main Avenue	All-way stop	41.1	E	89.3	F	Signal	7.4	A	7.4	A
25	Crows Landing Road/West Main Avenue	All-way stop	33.5	D	84.4	F	Signal	7.4	A	7.6	A
Notes: For signalized intersections, LOS is reported for overall intersection delay. For unsignalized intersections, LOS is reported for the minor movement. LOS = Level of Service Signal = Mitigated intersection Source: TJKM, 2012.											

The following actions and improvements would need to be undertaken to mitigate the proposed project's impacts:

Community Facilities District or Other Financing Mechanism

The City of Patterson and project applicant intend to pursue a Community Facilities District or other financing mechanism similar to the existing Community Facilities District No. 2005-01 for the West Patterson Business Park to fund and implement public infrastructure improvements for the proposed project. The financing mechanism would be overseen by the City of Patterson and would have the ability to issue bonds for infrastructure improvements and levy assessments against property owners within the district boundaries to repay the bonds. When project buildout triggers the need for the improvements, the City would use the bond proceeds to install the improvements. In cases where the necessary improvement is located on a facility outside of the jurisdictional control of the City of Patterson, the City would work with the relevant agency (i.e., the County of Stanislaus or Caltrans) to implement the improvement. Mitigation Measure TRANS-1a requires the applicant and the City to establish the financing mechanism prior to recordation on the first final map.

Intersection No. 1 – Sperry Avenue/I-5 Southbound Ramps

The intersection of Sperry Avenue/I-5 Southbound Ramps operates at LOS D during the PM peak hour under existing conditions without the project. With the addition of the proposed project's trips, this intersection would deteriorate to LOS F. As such, Mitigation Measure TRANS-1b is proposed that would require improvements to this intersection. The improvements would consist of signalizing

the intersection and adding left-turn lanes on the southbound and westbound approaches. Implementation of this mitigation would result in an acceptable LOS A during the PM peak hour.

The signal would be required at 5 percent of Phase I buildout and the turn lanes would be required at 80 percent of Phase I buildout. (Note that buildout represents square feet.)

Intersection No. 2 – Sperry Avenue/I-5 Northbound Ramps

The intersection of Sperry Avenue/I-5 Northbound Ramps operates at LOS B during the PM peak hour under existing conditions without the project. With the addition of the proposed project's trips, this intersection would operate to LOS D. Although LOS D is considered acceptable, this intersection would need to be signalized, due to the close proximity of the signal at the Sperry Avenue/I-5 Southbound Ramps intersection. As such, Mitigation Measure TRANS-1c is proposed that would require improvements to this intersection. The improvements would consist of (1) signalizing the intersection, (2) coordinating the signal operation with the signal at the Sperry Avenue/I-5 Southbound Ramps intersection, (3) installing a left-turn lane on the eastbound approach, (4) installing a right-turn lane on the westbound approach, and (5) installing a right-turn lane on the northbound approach. Implementation of this mitigation would result in an acceptable LOS B during the PM peak hour.

The signal would be required at 5 percent of Phase I buildout and the turn lanes would be required at 80 percent of Phase I buildout.

Intersection No. 16 – Rogers Road/SR-33

The intersection of Rogers Road/SR-33 operates at LOS B during the PM peak hour under existing conditions without the project. With the addition of the proposed project's trips, this intersection would deteriorate to LOS D. Although LOS D is considered acceptable, signal warrant criteria would be met. As such, Mitigation Measure TRANS-1d is proposed that would require improvements to this intersection. The improvements would consist of signalizing. Implementation of this mitigation would result in an acceptable LOS B during the PM peak hour.

The signal would be required at 50 percent of Phase I buildout.

Intersection No. 22 – Sycamore Avenue/East Las Palmas Avenue

The intersection of Sycamore Avenue/East Las Palmas Avenue operates at LOS C during the AM peak hour and LOS D during the PM peak hour under existing conditions without the project. With the addition of the proposed project's trips, this intersection would deteriorate to LOS F during both peak hours. As such, Mitigation Measure TRANS-1e is proposed that would require improvements to this intersection. The improvements would consist of signalizing the intersection. Implementation of this mitigation would result in an acceptable LOS A during the AM and PM peak hours.

The signal would be required at 8 percent of Phase I buildout.

Transportation

Intersection No. 23 – East Las Palmas Avenue/Poplar Avenue

The intersection of East Las Palmas Avenue/Poplar Avenue operates at LOS D during the PM peak hour under existing conditions without the project. With the addition of the proposed project's trips, this intersection would deteriorate to LOS F. As such, Mitigation Measure TRANS-1f is proposed that would require improvements to this intersection. The improvements would consist of (1) signalizing the intersection, and (2) installing a right-turn lane on the westbound approach. Implementation of this mitigation would result in an acceptable LOS A during the PM peak hour.

The signal would be required at 10 percent of Phase I buildout and the turn lanes would be required at 60 percent of Phase I buildout.

Intersection No. 24 – West Main Avenue/Carpenter Road

The intersection of West Main Avenue/Carpenter Road operates at LOS B during the AM and PM peak hours under existing conditions without the project. With the addition of the proposed project's trips, this intersection would deteriorate to LOS E during the AM peak hour and LOS F during the PM peak hour. As such, Mitigation Measure TRANS-1g is proposed that would require improvements to this intersection. The improvements would consist of (1) signalizing the intersection, (2) installing a left-turn lane on the eastbound approach, and (3) installing a left-turn lane on the westbound approach. Implementation of this mitigation would result in an acceptable LOS A during the AM and PM peak hours.

The signal would be required at 30 percent of Phase I buildout and the turn lanes would be required at 60 percent of Phase I buildout.

Intersection No. 25 – West Main Avenue/Crows Landing Road

The intersection of West Main Avenue/Crows Landing Road operates at LOS B during the AM peak hour and LOS C during the PM peak hour under existing conditions without the project. With the addition of the proposed project's trips, this intersection would deteriorate to LOS F during the AM and PM peak hours. As such, Mitigation Measure TRANS-1h is proposed that would require improvements to this intersection. The improvements would consist of (1) signalizing the intersection, (2) installing a left-turn lane on the eastbound approach, and (3) installing a left-turn lane on the westbound approach. Implementation of this mitigation would result in an acceptable LOS A during both the AM peak hour and the PM peak hour.

The signal would be required at 20 percent of Phase I buildout and the turn lanes would be required at 60 percent of Phase I buildout.

Planned Improvements

Many of the study intersections have been previously studied for impacts and mitigation by previously approved projects. In certain cases, improvements have been identified and have been programmed into capital improvement plans. In other cases, planned improvements are required to be implemented by other approved projects. Table 3.13-9 summarizes planned improvements by location.

Table 3.13-9: Potential Sources of Funding For Planned Improvements

Intersection	Potential Funding Source	Notes
Sperry Avenue/I-5 Southbound Ramps	Payment into Community Facilities District 2005-01	Cost estimated to be \$1 million
Sperry Avenue/I-5 Northbound Ramps	Payment into Community Facilities District 2005-01	Cost estimated to be \$1 million
Sperry Avenue/Rogers Road	Payment into Community Facilities District 2005-01	—
Sperry Avenue/Baldwin Road	Payment into Community Facilities District 2005-01	—
Sperry Avenue/American Eagle Drive	Payment into Community Facilities District 2005-01	—
Sperry Avenue/Las Palmas Avenue	Payment into Community Facilities District 2005-01	—
Sperry Avenue/Ward Avenue	Payment into Community Facilities District 2005-01	Cost estimated to be \$650,000
Sperry Avenue/S. Del Puerto Avenue	Payment into Community Facilities District 2005-01	Signal currently being designed
Sperry Avenue/SR-33	Payment into Community Facilities District 2005-01	Walmart improving intersection to add signal and turn lanes
SR-33/Las Palmas Avenue	Payment into Community Facilities District 2005-01	—
Ward Avenue/American Eagle Drive	—	Signal currently being designed
Ward Avenue/SR-33	Payment into Community Facilities District 2005-01	Cost estimated to be \$400,000
Zacharias Road/SR-33*	—	Improvements triggered by Villages of Patterson Project
Rogers Road/SR-33*	—	Improvements triggered by Villages of Patterson Project
SR-33/Eucalyptus Avenue	—	Improvements triggered by Villages of Patterson Project
Olive Avenue/SR-33	Payment into Community Facilities District 2005-01	—
Olive Avenue/Sycamore Avenue	—	Villages of Patterson Project study intersection
Walnut Avenue/Sycamore Avenue	—	Villages of Patterson Project study intersection
Las Palmas Avenue/Sycamore Avenue	Stanislaus County Public Works	Utility coordination with PG&E; Traffic signals at Sycamore Avenue and Elm Avenue

Table 3.13-9 (cont.): Potential Sources of Funding For Planned Improvements

Intersection	Potential Funding Source	Notes
Carpenter Road/West Main Avenue*	—	Improvements planned by 2030 as indicated in the Villages of Patterson Project; West Main widening between Carpenter Road and San Joaquin River planned by 2027. Cost estimated at \$8.7 million.
Crows Landing Road/West Main Avenue*	Stanislaus County Public Works	Install traffic signals; add left turn lane and drainage facilities. Cost estimated at \$1.85 million.
Note: * Intersection currently located in unincorporated Stanislaus County. Source: TJKM, 2012.		

New Project Access Intersections on Rogers Road

Based on the projected traffic and results of the analysis, it is anticipated that a signal would be required at Rogers Road/North-South Internal Roadway. This is reflected in Mitigation Measure TRANS-1i.

Roadway Segment Operations

Table 3.13-10 summarizes the results of the arterial roadway segments level of service analysis. All arterial roadway segments are expected to operate acceptable with the existing lane configurations in this scenario.

Table 3.13-10: Arterial Levels of Service – Existing Plus Phase I Conditions

No.	Roadway Segment	Lanes (directional)	Daily Volume (vehicles)	Speed (mph)	LOS
A	SR-33, south of Sperry Avenue	1	9,270	27.5	C
B	SR-33, north of Zacharias Road	1	8,580	25.6	D
C	Zacharias Road, west of SR-33	1	4,720	32.3	B
D	Zacharias Road, west of Rogers Road	1	780	32.4	B
E	Baldwin Road, north of Las Palmas Avenue	1	2,400	23.8	C
F	Ward Avenue, north of Las Palmas Avenue	1	4,590	24.3	B
G	Sperry Avenue, east of Rogers Road	2	12,080	29.0	B
J	Ward Avenue, south of Marshal Road	1	3,080	29.6	B
L	Main Street, east of Carpenter Road	1	8,780	32.1	B
Source: TJKM, 2012.					

Freeway Segment Operations

Table 3.13-11 summarizes the results of the freeway roadway segments level of service analysis. All arterial roadway segments are expected to operate acceptable with the existing lane configurations in this scenario.

Table 3.13-11: Freeway Levels of Service – Existing Plus Phase I Conditions

No.	Freeway Segment	Lanes (Directional)	Volume	Density (pc/mi/ln)	LOS
H	I-5, north of Sperry Avenue	2	2,905	24.2	C
I	I-5, south of Sperry Avenue	2	2,687	22.0	C
K	I-5, south of Fink Road	2	3,149	26.8	D
Notes: pc/mi/ln = passenger cars per mile per lane Source: TJKM, 2012.					

Conclusion

Under Existing Plus Phase I conditions, the proposed project would contribute vehicular trips to intersections projected to operate at unacceptable levels. Mitigation is proposed that would require the project applicant to provide fair-share fees for all feasible improvements necessary to improve operations to acceptable levels.

Although the proposed project would contribute funding for necessary improvements, many of the affected facilities are under the jurisdiction of an agency other than the City of Patterson (e.g., Caltrans or the County of Stanislaus). As such, the City of Patterson cannot assure that the necessary improvements would be installed as contemplated. Accordingly, the residual significance of this impact is significant and unavoidable.

Offsite Utility Alignments

The offsite utility alignments would not generate any new vehicle trips. As such, they have no potential to affect traffic operations. No impacts would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-1a Prior to recordation of the first final map, the project applicant and the City of Patterson shall establish a Community Facilities District or other financing mechanism to fund transportation improvements. Applicants that pursue development in accordance with the Master Development Plan shall contribute a fair share of the costs of necessary improvements at the time building permits are sought through participation in the Community Facilities District or other financing mechanism.

- MM TRANS-1b** At the time of 5 percent of Phase I buildout, the intersection of Sperry Avenue/I-5 Southbound Ramps shall be signalized. At the time of 80 percent of Phase I buildout, left-turn lanes shall be added to the southbound and westbound approaches. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.
- MM TRANS-1c** At the time of 5 percent of Phase I buildout, the intersection of Sperry Avenue/I-5 Northbound Ramps shall be signalized and the signal operation shall be coordinated with the signal at the Sperry Avenue/I-5 Southbound Ramps intersection. At the time of 80 percent of Phase I buildout, the following improvements shall be implemented:
- (1) Install a left-turn lane on the eastbound approach, (2) install a right-turn lane on the westbound approach, and (3) install a right-turn lane on the northbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.
- MM TRANS-1d** At the time of 50 percent of Phase I buildout, the intersection of Rogers Road/State Route 33 shall be signalized. This improvement shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.
- MM TRANS-1e** At the time of 8 percent of Phase I buildout, the intersection of Sycamore Avenue/East Las Palmas Avenue shall be signalized. This improvement shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.
- MM TRANS-1f** At the time of 10 percent of Phase I buildout, intersection of East Las Palmas Avenue/Poplar Avenue shall be signalized. At the time of 60 percent of Phase I buildout, a right-turn lane shall be installed on the westbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.
- MM TRANS-1g** At the time of 30 percent of Phase I buildout, intersection of West Main Avenue/Carpenter Road shall be signalized. At the time of 60 percent of Phase I buildout, the following improvements shall be implemented: (1) install a left-turn lane on the eastbound approach, and (2) install a left-turn lane on the westbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.
- MM TRANS-1h** At the time of 20 percent of Phase I buildout, intersection of West Main Avenue/Crows Landing Road shall be signalized. At the time of 60 percent of Phase

I buildout, the following improvements shall be implemented: (1) install a left-turn lane on the eastbound approach, and (2) install a left-turn lane on the westbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.

MM TRANS-1i When intersection operations approach unacceptable levels, but not later than 50 percent buildout of Phase I, the intersection of Rogers Road/North-South Internal Roadway shall be signalized. This improvement shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.

Level of Significance After Mitigation

Significant unavoidable impact.

2035 Cumulative Traffic

Impact TRANS-2: The proposed project would contribute to unacceptable traffic operations under 2035 Cumulative conditions.

Impact Analysis

This impact will assess the potential for the proposed project to contribute to unacceptable traffic operations under 2035 Cumulative conditions.

West Patterson Business Park Expansion Project

The Patterson Model from the General Plan 2010 update was used to conduct the 2035 cumulative analysis. The model has a more detailed network in the Patterson area and land use information with smaller and more detailed zonal level Traffic Analysis Zones (TAZs). Using the model will provide consistency with the General Plan.

In addition, TJKM obtained the latest version of the StanCOG Model and compared the 2035 land use information to ensure overall consistency. A comparison showed that land use assumptions of the current Patterson model were higher than the latest StanCOG model. Accordingly, the Patterson model land use data outside the Patterson area was adjusted accordingly to within 2 percent of the land use data of the StanCOG Model. The Year 2035 Model land use and network assumptions were used for the traffic projections.

Regional Development

To be consistent with the land use assumption in the StanCOG model, the proposed West Park project was not included in the 2035 analysis. The previously completed West Park Logistics Center analysis has shown that a potential future interchange at Oak Flat Road/I-5 that will primarily serve the West Park Logistics Center project area would be required with the proposed project.

General Plan Description

The 2010 Patterson General Plan is projected to accommodate a 20-year population of approximately 47,800. The plan emphasizes job-creation with the designation of additional land for industrial development in the first 20 years extending west of Rogers Road north of the Patterson Business Park and between the canals.

Key attributes of the approved General Plan are:

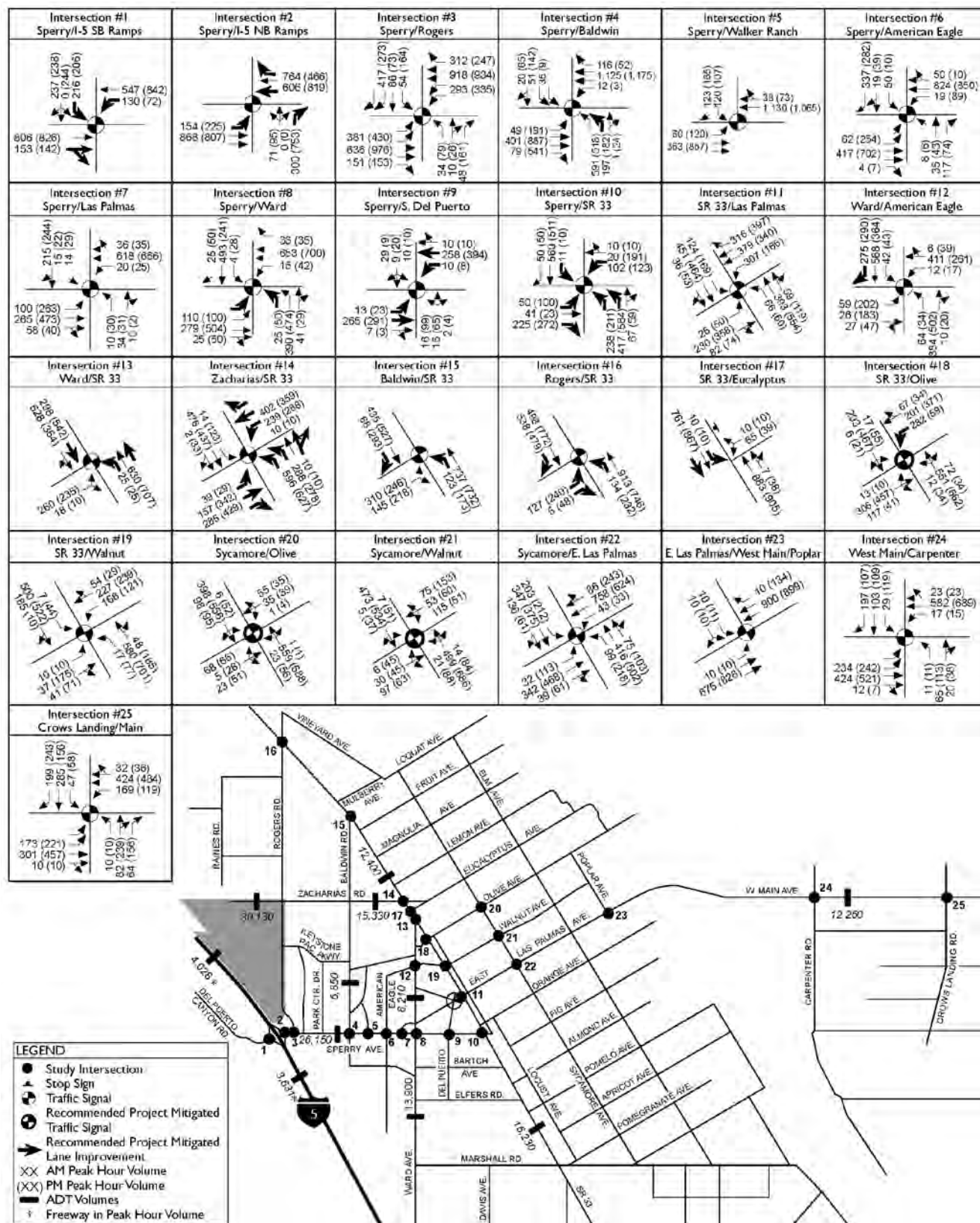
- New residential neighborhoods are shown to the north of the Patterson Business Park and on the land north of Zacharias Road surrounding the high school site west of SR-33 and west of the current city limits and south of Zacharias Road.
- The area west of I-5 is shown with a “Mixed Use” designation that would accommodate housing and commercial development.
- The area south of Elfers Road has been designated Estate Residential with a cluster subdivision requirement.

*Intersection Operations**Cumulative 2035 No Project*

Exhibit 3.13-5 shows the forecasted peak hour turning movement volumes and the proposed lane geometry for Cumulative 2035 No Project conditions.

Based on input from City staff, planned improvements by 2035 include the following

- **Intersection No. 3: Rogers Road/Sperry Avenue** – Assumes Rogers Road is extended south beyond Sperry Avenue and expands the intersection. Southbound add one through lane and a second right-turn lane; westbound add a second through lane and two left-turn lanes; northbound add a left-turn lane, a through/right lane and a right-turn lane; eastbound add additional left-turn and through lanes and a new right-turn lane.
- **Intersection No. 4: Baldwin Road/Sperry Avenue** – Add a second westbound through lane and an exclusive eastbound right-turn lane.
- **Intersection No. 6: American Eagle Drive/Sperry Avenue** – Add exclusive right and left-turn lanes southbound; add an exclusive right-turn lane northbound; and add a second left-turn lane and an exclusive right-turn lane eastbound.
- **Intersection No. 23: Poplar/E. Las Palmas/West Main Avenue** – Signalize the intersection; southbound, convert right-turn lane to a right/left-turn lane at this “T” intersection; westbound add an exclusive right-turn lane, convert the existing right/through lane to a through lane and add a second through lane; eastbound add a second through lane.



Source: TJKM Transportation Consultants, April 2012.

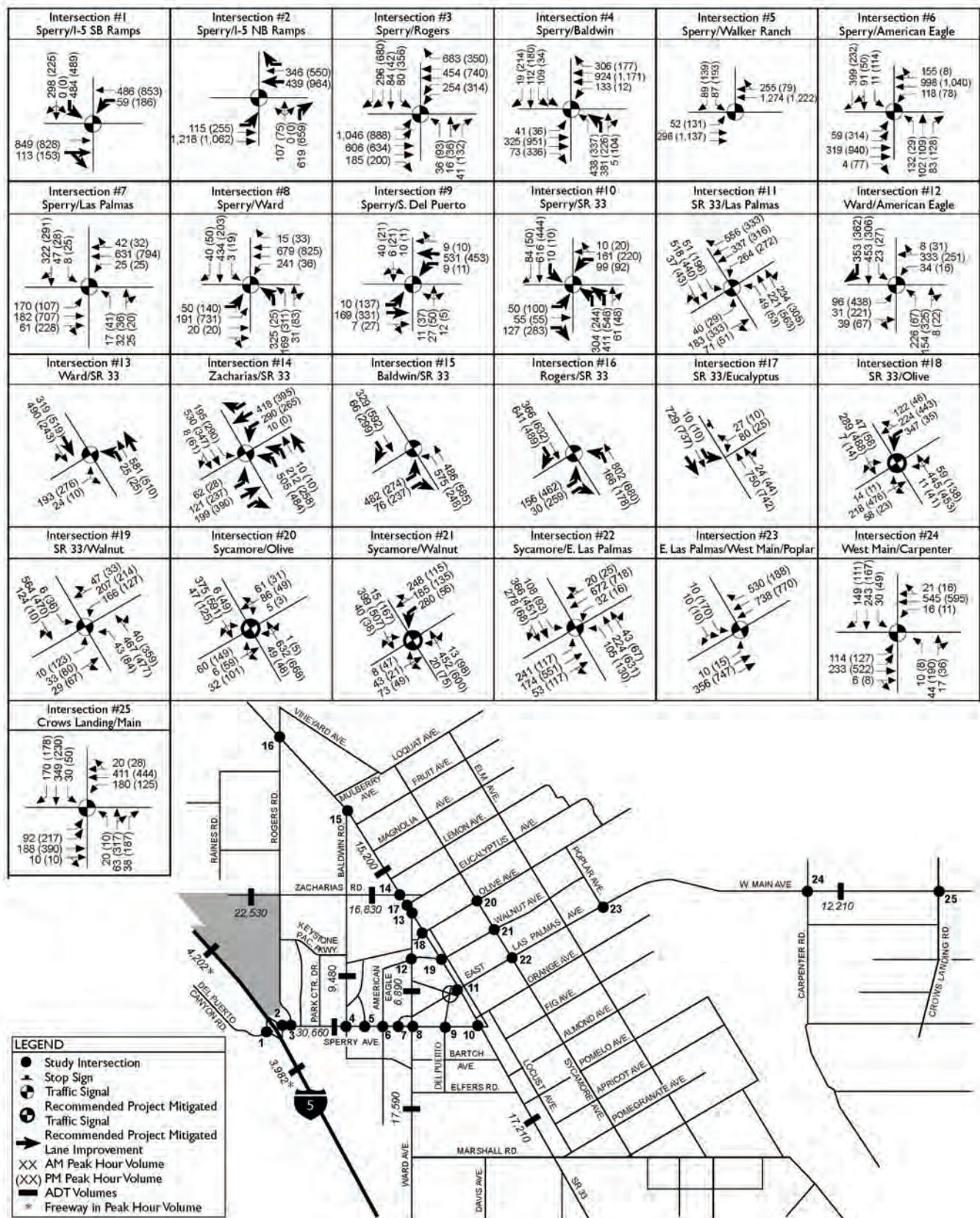


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Exhibit 3.13-5 2035 No Project Peak Hour Turning Movement Volumes, Lane Geometry, and Controls

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ENVIRONMENTAL IMPACT REPORT



Source: TJKM Transportation Consultants, April 2012.



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Exhibit 3.13-6 2035 Plus Project Peak Hour Turning Movement Volumes, Lane Geometry, and Controls

CITY OF PATTERSON • WEST PATTERSON BUSINESS PARK EXPANSION PROJECT
ENVIRONMENTAL IMPACT REPORT

- **Intersection No. 24: Carpenter Road/West Main Avenue** – Add a traffic signal; southbound add exclusive left- and right-turn lanes; westbound add exclusive left-turn and through lanes and retain a through/right lane; northbound add a left-turn lane; and eastbound add a through lane and two left-turn lanes.
- **Intersection No. 25: Crows Landing Road/West Main Avenue** – Add a traffic signal; southbound add exclusive left-turn lane; westbound add an exclusive left-turn lane and a through lane; northbound add an exclusive left-turn lane and convert the through/left lane to a through/right lane; and eastbound add two exclusive left-turn lanes, convert the through/left lane to a through lane, and add a through/right lane.

Table 3.13-12 summarizes the results of the intersection level of service analysis in this scenario.

Table 3.13-12: Intersection Levels of Service – Year 2035 No Project Conditions

No.	Intersection	Year 2035 No Project					Mitigated Year 2035 No Project				
		Existing Control	AM		PM		Future Control	AM		PM	
			Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
1	Sperry Avenue/I-5 Southbound Ramps	One-way stop	120.0	F	120.0	F	Signal	13.1	B	23.6	C
2	Sperry Avenue/I-5 Northbound Ramps	One-way stop	120.0	F	120.0	F	Signal	7.0	A	14.8	B
3	Sperry Avenue/Rogers Road	Signal	120.0	F	120.0	F	Signal	15.4	B	19.7	B
4	Sperry Avenue/Baldwin Road	Signal	120.0	F	120.0	F	Signal	28.4	C	42.0	D
5	Sperry Avenue/Walker Parkway	Signal	7.3	A	7.7	A	Signal	6.7	A	6.7	A
6	Sperry Avenue/American Eagle Drive	Signal	16.5	C	54.5	D	Signal	18.7	B	17.2	B
7	Sperry Avenue/Las Palmas Avenue	Signal	6.4	A	12.2	B	Signal	11.8	B	16.4	B
8	Sperry Avenue/Ward Avenue	Signal	27.0	C	29.3	C	Signal	21.9	C	23.2	C
9	Sperry Avenue/S. Del Puerto Avenue	Signal	7.4	A	7.5	A	Signal	6.4	A	6.2	A
10	Sperry Avenue/SR-33	Two-way stop	120.0	F	120.0	F	Signal	40.9	D	31.0	C
11	SR-33/Las Palmas Avenue	Signal	30.2	C	42.3	D	Signal	19.4	B	24.9	B
12	Ward Avenue/American Eagle Drive	Signal	120.0	F	120.0	F	Signal	19.2	B	29.9	C
13	Ward Avenue/SR-33	One-way stop	120.0	F	120.0	F	Signal	6.7	A	6.4	A

Table 3.13-12 (cont.): Intersection Levels of Service – Year 2035 No Project Conditions

No.	Intersection	Year 2035 No Project					Mitigated Year 2035 No Project				
		Existing Control	AM		PM		Future Control	AM		PM	
			Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
14	Zacharias Road/SR-33	One-way stop	120.0	F	120.0	F	Signal	10.0	B	11.4	B
15	Baldwin Road/SR-33	One-way stop	120.0	F	120.0	F	Signal	21.9	C	34.4	C
16	Rogers Road/SR-33	One-way stop	120.0	F	120.0	F	Signal	6.2	A	14.6	B
17	SR-33/Eucalyptus Avenue	One-way stop	120.0	F	120.0	F	One-way stop	24.3	C	22.4	C
18	Olive Avenue/SR-33	Two-way stop	120.0	F	120.0	F	Signal	49.1	D	32.7	C
19	Walnut Avenue/M Street/SR-33	Signal	12.1	B	28.3	C	Signal	11.4	B	14.9	B
20	Olive Avenue/Sycamore Avenue	All-way stop	39.5	E	120.0	F	Signal	5.6	A	10.6	B
21	Walnut Avenue/Sycamore Avenue	Two-way stop	91.3	F	120.0	F	Signal	8.3	A	30.4	C
22	Las Palmas Avenue/Sycamore Avenue	All-way stop	120.0	F	120.0	F	Signal	26.5	C	37.1	D
23	Poplar Avenue/Las Palmas Avenue	One-way stop	32.5	D	40.7	E	Signal	4.8	A	5.0	A
24	Carpenter Road/West Main Avenue	All-way stop	120.0	F	120.0	F	Signal	12.7	B	12.6	B
25	Crows Landing Road/West Main Avenue	All-way stop	120.0	F	120.0	F	Signal	15.3	B	13.4	B
Notes: For signalized intersections, LOS is reported for overall intersection delay. For unsignalized intersections, LOS is reported for the minor movement. LOS = Level of Service Signal = Mitigated intersection Source: TJKM, 2012.											

Triggering for Zacharias Road Interchange

The results as shown above do not include the effects of a new Zacharias Road interchange. The results of the traffic forecasts showed that under this scenario, Sperry Avenue near the I-5 interchange needs to be a four-lane road and both of the on/off-ramps should be signalized. An improved four-lane Sperry Avenue and I-5 interchange would likely be able to accommodate a large amount of the cumulative land use under this scenario. Depending on the level of other developments in the area and regional traffic (especially the West Park development), it is estimated that a new interchange at Zacharias Road might not be needed for the 2035 Cumulative No Project Condition scenario until late into the latter half of the full buildout of the General Plan. However, a new interchange will provide a

good alternative to the main east-west Sperry Avenue arterial, which is currently the main access into the city and the downtown core.

2035 Cumulative Plus Project

This scenario adds traffic from the proposed West Patterson Expansion project to the 2035 Cumulative base conditions. Turning movement volumes at the study intersections and link volumes on the study segments were obtained from the project model.

The projected 2035 Cumulative plus Project peak hour turning movement volumes and lane configurations are shown in Exhibit 3.13-6, above. Table 3.13-13 summarizes the intersection level of service conditions for this scenario. Levels of service analysis results indicate that 14 of the 25 study intersections will require new signals. The detailed calculation sheets are contained in Appendix I.

Table 3.13-13: Intersection Levels of Service – Year 2035 Plus Project Conditions

No.	Intersection	Year 2035 Plus Project						Mitigated Year 2035 Plus Project			
		Existing Control	AM		PM		Future Control	AM		PM	
			Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
1	Sperry Avenue/I-5 Southbound Ramps	One-way stop	120.0	F	120.0	F	Signal	15.9	B	24.2	C
2	Sperry Avenue/I-5 Northbound Ramps	One-way stop	120.0	F	120.0	F	Signal	12.5	B	19.9	B
3	Sperry Avenue/Rogers Road	Signal	120.0	F	120.0	F	Signal	26.3	C	37.4	D
4	Sperry Avenue/Baldwin Road	Signal	120.0	F	120.0	F	Signal	26.4	C	24.9	C
5	Sperry Avenue/Walker Parkway	Signal	12.9	B	10.0	B	Signal	7.1	A	9.1	A
6	Sperry Avenue/American Eagle Drive	Signal	80.3	F	108.8	F	Signal	35.1	D	39.5	D
7	Sperry Avenue/Las Palmas Avenue	Signal	20.3	C	8.6	A	Signal	18.7	B	14.1	B
8	Sperry Avenue/Ward Avenue	Signal	33.1	C	26.9	C	Signal	45.4	D	21.3	C
9	Sperry Avenue/S. Del Puerto Avenue	Signal	6.8	A	7.7	A	Signal	5.3	A	5.6	A
10	Sperry Avenue/SR-33	Two-way stop	120.0	F	120.0	F	Signal	39.8	D	31.3	C
11	SR-33/Las Palmas Avenue	Signal	20.8	C	73.8	E	Signal	13.2	B	47.1	D
12	Ward Avenue/American Eagle Drive	Signal	120.0	F	120.0	F	Signal	24.9	C	28.1	C

Table 3.13-13 (cont.): Intersection Levels of Service – Year 2035 Plus Project Conditions

No.	Intersection	Year 2035 Plus Project					Mitigated Year 2035 Plus Project				
		Existing Control	AM		PM		Future Control	AM		PM	
			Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
13	Ward Avenue/SR-33	One-way stop	120.0	F	120.0	F	Signal	5.8	A	6.9	A
14	Zacharias Road/SR-33	One-way stop	120.0	F	120.0	F	Signal	9.6	A	9.0	A
15	Baldwin Road/SR-33	One-way stop	120.0	F	120.0	F	Signal	51.7	D	23.7	C
16	Rogers Road/SR-33	One-way stop	120.0	F	120.0	F	Signal	6.5	A	27.2	C
17	SR-33/Eucalyptus Avenue	One-way stop	120.0	F	42.2	E	One-way stop	21.8	C	17.2	C
18	Olive Avenue/SR-33	Two-way stop	120.0	F	120.0	F	Signal	27.8	C	18.8	B
19	Walnut Avenue/M Street/SR-33	Signal	10.7	B	16.6	B	Signal	10.2	B	13.7	B
20	Olive Avenue/Sycamore Avenue	All-way stop	72.5	F	120.0	F	Signal	7.2	A	18.1	B
21	Walnut Avenue/Sycamore Avenue	Two-way stop	120.0	F	120.0	F	Signal	16.2	B	17.4	B
22	Las Palmas Avenue/Sycamore Avenue	All-way stop	120.0	F	120.0	F	Signal	31.0	C	27.5	C
23	Poplar Avenue/Las Palmas Avenue	One-way stop	19.5	C	120.0	F	Signal	4.3	A	5.7	A
24	Carpenter Road/West Main Avenue	All-way stop	79.8	F	120.0	F	Signal	13.3	B	11.5	B
25	Crows Landing Road/West Main Avenue	All-way stop	101.4	F	120.0	F	Signal	14.2	B	14.2	B
Notes: For signalized intersections, LOS is reported for overall intersection delay. For unsignalized intersections, LOS is reported for the minor movement. LOS = Level of Service Signal = Mitigated intersection Source: TJKM, 2012.											

Note that in certain cases, delay and LOS values shown in Table 3.13-13 for the Year 2035 Plus Project Condition are better than those reported in Table 3.13-12 for the Year 2035 No Project Condition for the same location. This reflects the implementation of planned traffic improvements at these locations, as well as travel pattern changes associated with the new employment opportunities created by the project that result in fewer trips being assigned to these intersections.

The following intersections would require improvement measures:

Intersection No. 1 – Sperry Avenue/I-5 Southbound Ramps

The intersection of Sperry Avenue/I-5 Southbound Ramps operates at LOS F during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate LOS F during both peak hours. As such, Mitigation Measure TRANS-1b is proposed that would require improvements to this intersection. The improvements would consist of signalizing the intersection and adding left-turn lanes on the southbound and westbound approaches. Implementation of this mitigation would result in an acceptable LOS B during the AM peak hour and LOS C during the PM peak hour.

Intersection No. 2 – Sperry Avenue/I-5 Northbound Ramps

The intersection of Sperry Avenue/I-5 Northbound Ramps operates at LOS F during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate at LOS F during both peak hours. As such, Mitigation Measure TRANS-1c is proposed that would require improvements to this intersection. The improvements would consist of (1) signalizing the intersection, (2) installing a left-turn lane on the eastbound approach, (3) installing a right-turn lane on the westbound approach, and (4) installing a right-turn lane on the northbound approach. Implementation of this mitigation would result in an acceptable LOS A during the PM peak hour.

Intersection No. 3 – Sperry Avenue/Rogers Road

The intersection of Sperry Avenue/Rogers Road operates at LOS F during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate at LOS F during both peak hours. As such, Mitigation Measure TRANS-2a is proposed would require improvements to this intersection. The improvements would consist of (1) installing a through and right-turn lane on the eastbound approach; (2) installing two left-turn lanes, a through lane, and two right-turn lanes on the westbound approach; (3) installing a left-turn lane on the northbound approach; and (4) installing two left-turn lanes on the southbound approach. Implementation of this mitigation would result in an acceptable LOS C during both the AM and PM peak hours.

Intersection No. 4 – Sperry Avenue/Baldwin Road

The intersection of Sperry Avenue/Baldwin Road operates at LOS F during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate at LOS F during both peak hours. As such, Mitigation Measure TRANS-2b is proposed would require improvements to this intersection. The improvements would consist of (1) signalizing the intersection; (2) installing a left-turn and a right-turn lane on the eastbound approach; (3) installing left-turn, through, and right-turn lanes on the westbound approach; (4) installing two left-turn lanes on the northbound approach; and (5) installing two left-turn lanes on the southbound approach. Implementation of this mitigation would result in an acceptable LOS C during both the AM peak hour and PM peak hour.

Intersection No. 8 – Sperry Avenue/Ward Avenue

The intersection of Sperry Avenue/Ward Avenue operates at LOS C during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate at LOS C during both peak hours. As such, Mitigation Measure TRANS-2c is proposed would require improvements to this intersection. The improvements would consist of (1) installing a left-turn lane on the eastbound approach, (2) installing a left-turn lane on the northbound approach, and (3) installing a right-turn lane on the southbound approach. Implementation of this mitigation would result in an acceptable LOS B during the AM peak hour and LOS C during the PM peak hour.

Intersection No. 9 – Sperry Avenue/S. Del Puerto Avenue

The intersection of Sperry Avenue/S. Del Puerto Avenue operates at LOS A during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate at LOS A during both peak hours. As such, Mitigation Measure TRANS-2d is proposed would require improvements to this intersection. The improvements would consist of (1) installing a left-turn lane on the eastbound approach and (2) installing a left-turn lane on the westbound approach. Implementation of this mitigation would result in an acceptable LOS A during both the AM peak hour and PM peak hour.

Intersection No. 10 – Sperry Avenue/SR-33

The intersection of Sperry Avenue/SR-33 operates at LOS F during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate at LOS F during both peak hours. This intersection is planned to be signalized in 2012 as a condition of the approved Patterson Walmart Project. However, in the event that it is not signalized as planned, Mitigation Measure TRANS-2e is proposed that would require the signalization of the intersection. Implementation of this mitigation would result in an acceptable LOS B during the AM peak hour and acceptable LOS C during the PM peak hour.

Intersection No. 12 – Ward Avenue/American Eagle Drive

The intersection of Ward Avenue/American Avenue Drive operates at LOS F during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate at LOS F during both peak hours. As such, Mitigation Measure TRANS-2f is proposed that would require improvements to this intersection. The improvements would consist of installing a southbound right-turn lane. Implementation of this mitigation would result in an acceptable LOS C during the AM peak hour and PM peak hour.

Intersection No. 13 – Ward Avenue/SR-33

The intersection of Ward Avenue/SR-33 operates at LOS F during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed

project's trips, this intersection would continue to operate at LOS F during both peak hours. As such, Mitigation Measure TRANS-2g is proposed that would require improvements to this intersection. The improvements would consist of (1) signalizing the intersection and (2) installing a left-turn lane on the northbound approach. Implementation of this mitigation would result in an acceptable LOS A during the AM peak hour and PM peak hour.

Intersection No. 14 – Zacharias Road/SR-33

The intersection of Zacharias Road/SR-33 operates at LOS F during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate at LOS F during both peak hours. As such, Mitigation Measure TRANS-2h is proposed that would require improvements to this intersection. The improvements would consist of (1) signalizing the intersection, (2) adding two left-turn lanes on the northbound approach, and (3) adding a right-turn lane on the eastbound approach. Implementation of this mitigation would result in an acceptable LOS A during both the AM peak hour and the PM peak hour.

Intersection No. 15 – Baldwin Road/SR-33

The intersection of Baldwin Road/SR-33 operates at LOS F during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate at LOS F during both peak hours. As such, Mitigation Measure TRANS-2i is proposed that would require improvements to this intersection. The improvements would consist of (1) signalizing the intersection, (2) installing a left-turn lane on the northbound approach, and (3) installing a right-turn lane on the southbound approach. Implementation of this mitigation would result in acceptable LOS C during the AM peak hour and LOS D during the PM peak hour.

Intersection No. 16 – Rogers Road/SR-33

The intersection of Rogers Road/SR-33 operates at LOS F during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate at LOS F during both peak hours. As such, Mitigation Measure TRANS-2j is proposed that would require improvements to this intersection. The improvements would consist of (1) signalizing the intersection and (2) installing a left-turn lane on the northbound approach. Implementation of this mitigation would result in acceptable LOS A during the AM peak hour and LOS C during the PM peak hour.

Intersection No. 17 – SR-33/Eucalyptus Avenue

The intersection of SR-33/Eucalyptus operates at LOS F during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate at LOS F during the AM peak hour and experience marginal improvement to unacceptable LOS E during the PM peak hour. As such, Mitigation Measure TRANS-2k is proposed that would require improvements to this intersection. The

improvements would consist of (1) installing a left-turn and a through lane on the southbound approach and (2) installing a through lane on the northbound approach. Implementation of this mitigation would result in an acceptable LOS C in during both peak hours.

Intersection No. 18 – Olive Avenue/SR-33

The intersection of Olive Avenue/SR-33 operates at LOS F during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate at LOS F during both peak hours. As such, Mitigation Measure TRANS-21 is proposed that would require improvements to this intersection. The improvements would consist of (1) signalizing the intersection; (2) installing a left-turn lane on the eastbound approach; (3) installing a left-turn lane on the westbound approach; (4) installing a left-turn lane on the northbound approach; and (5) installing a left-turn lane on the southbound approach. Implementation of this mitigation would result in acceptable LOS C during the AM peak hour and acceptable LOS B during the PM peak hour.

Intersection No. 21 – Walnut Avenue/Sycamore Avenue

The intersection of Walnut Avenue/Sycamore Avenue operates at LOS F during the AM peak hour and PM peak hour under Cumulative 2035 conditions without the project. With the addition of the proposed project's trips, this intersection would continue to operate at LOS F during both peak hours. As such, Mitigation Measure TRANS-2m is proposed that would require improvements to this intersection. The improvements would consist of signalizing the intersection. Implementation of this mitigation would result in acceptable LOS B during both the AM peak hour and the PM peak hour.

New Project Access Intersections on Rogers Road

Based on the projected traffic and results of the analysis, it is anticipated that a signal would be required at the (1) Rogers Road/North-South Internal Roadway, (2) Rogers Road/Zacharias Road, and (3) Rogers Road/Keystone Pacific Parkway. Signalization of all three intersections is required by Mitigation Measure TRANS-1i, Mitigation Measure TRANS-2n, and Mitigation Measure TRANS-2o respectively.

Zacharias Road (South County Expressway/I-5)

Based on the cumulative land use assumptions of the 2035 Cumulative plus Project scenario, it is estimated that a new interchange at Zacharias Road might be needed at approximately 60 percent of the buildout of the proposed West Patterson Business Park Expansion project. The need for the new interchange will depend heavily on the pace of other developments in the area and regional traffic. In addition, the new interchange will provide a good alternative to the main east-west Sperry Avenue arterial, which is currently the main access into the City and the downtown core.

A conceptual study has indicated that a potential alignment of the roadway from the east (west of Rogers Road) will veer north and cross the Liljenquist property before connecting at I-5. This alignment seems reasonable, since it will avoid the creek near Zacharias Road, provides nearly

perpendicular alignment for the proposed ramps at I-5, and meets the 1-mile Caltrans spacing requirement as it relates to the Sperry Avenue interchange.

In recognition that this improvement is conceptual and not yet programmed into a fee program, Mitigation Measure TRANS-2p requires the project applicant to pay fees into such a program, provided that one is established at the time building permits are sought.

Project Contribution

Table 3.13-14 summarizes the project contribution to PM peak hour intersection volumes under Year 2035 conditions. This number would represent the proposed project's "fair share" contribution for improvements at affected intersections.

Table 3.13-14: Fair Share Contributions

No.	Intersection	Project Only Traffic Volume (PM Peak Hour)	Total Intersection Traffic Volume (PM Peak Hour)	Project Contribution
1	Sperry Avenue/I-5 Southbound Ramps	538	2,734	20%
2	Sperry Avenue/I-5 Northbound Ramps	894	3,565	25%
3	Sperry Avenue/Rogers Road	1,463	4,465	33%
4	Sperry Avenue/Baldwin Road	1,075	3,778	28%
5	Sperry Avenue/Walker Parkway	801	2,901	28%
6	Sperry Avenue/American Eagle Drive	836	3,119	27%
7	Sperry Avenue/Las Palmas Avenue	616	2,429	25%
8	Sperry Avenue/Ward Avenue	386	2,242	17%
9	Sperry Avenue/S. Del Puerto Avenue	202	1,094	18%
10	Sperry Avenue/SR-33	182	1,934	9%
11	SR-33/Las Palmas Avenue	428	2,934	15%
12	Ward Avenue/American Eagle Drive	348	2,133	16%
13	Ward Avenue/SR-33	230	1,548	15%
14	Zacharias Road/SR-33	412	2,755	15%
15	Baldwin Road/SR-33	226	2,235	10%
16	Rogers Road/SR-33	470	2,700	17%

Table 3.13-14 (cont.): Fair Share Contributions

No.	Intersection	Project Only Traffic Volume (PM Peak Hour)	Total Intersection Traffic Volume (PM Peak Hour)	Project Contribution
17	SR-33/Eucalyptus Avenue	230	1,548	15%
18	Olive Avenue/SR-33	343	2,186	16%
19	Walnut Avenue/M Street/SR-33	267	2,070	13%
20	Olive Avenue/Sycamore Avenue	122	1,878	6%
21	Walnut Avenue/Sycamore Avenue	95	1,908	5%
22	Las Palmas Avenue/Sycamore Avenue	366	2,984	12%
23	Poplar Avenue/Las Palmas Avenue	353	1,875	19%
24	Carpenter Road/West Main Avenue	272	1,840	15%
25	Crows Landing Road/West Main Avenue	268	2,166	12%
Source: TJKM, 2012.				

Roadway Segment Operations

Table 3.13-15 and Table 3.13-16 summarize the results of the arterial roadway segments level of service analysis. All study roadway segments are expected to operate acceptably with the assumed lane configurations in this scenario.

Table 3.13-15: Arterial Levels of Service – Year 2035 No Project Conditions

No.	Roadway Segment	Lanes (directional)	Daily Volume (vehicles)	Speed (mph)	LOS
A	SR-33, south of Sperry Avenue	1	16,230	26.7	D
B	SR-33, north of Zacharias Road	1	12,400	25.2	D
C	Zacharias Road, west of SR-33	1	15,330	31.1	B
D	Zacharias Road, west of Rogers Road	1	30,130	28.7	B
E	Baldwin Road, north of Las Palmas Avenue	1	6,850	23.5	C
F	Ward Avenue, north of Las Palmas Avenue	1	8,210	24.0	B
G	Sperry Avenue, east of Rogers Road	2	26,150	28.3	B
J	Ward Avenue, south of Marshal Road	1	13,900	28.9	B
L	Main Street, east of Carpenter Road	1	12,260	32.0	B
Source: TJKM, 2012.					

Table 3.13-16: Arterial Levels of Service – Year 2035 Plus Project Conditions

No.	Roadway Segment	Lanes (directional)	Daily Volume (vehicles)	Speed (mph)	LOS
A	SR-33, south of Sperry Avenue	1	17,210	26.6	D
B	SR-33, north of Zacharias Road	1	15,200	24.9	D
C	Zacharias Road, west of SR-33	1	16,830	31.9	B
D	Zacharias Road, west of Rogers Road	1	22,530	31.7	B
E	Baldwin Road, north of Las Palmas Avenue	1	9,480	23.3	C
F	Ward Avenue, north of Las Palmas Avenue	1	6,890	24.1	B
G	Sperry Avenue, east of Rogers Road	2	30,660	28.0	B
J	Ward Avenue, south of Marshal Road	1	17,590	28.6	B
L	Main Street, east of Carpenter Road	1	12,210	32.0	B
Source: TJKM, 2012.					

Freeway Segment Operations

Table 3.13-17 and Table 3.13-18 summarize the results of the freeway segments level of service analysis. All freeway segments are expected to operate acceptably with the assumed lane configurations in this scenario.

Table 3.13-17: Freeway Levels of Service – Year 2035 No Project Conditions

No.	Freeway Segment	Lanes (directional)	Volume	Density (pc/mi/ln)	LOS
H	I-5, north of Sperry Avenue	2	4,028	40.1	E
	Mitigated	3		22.0	C
I	I-5, south of Sperry Avenue	2	3,631	33.2	D
	Mitigated	3		17.3	B
K	I-5, south of Fink Road	2	3,398	29.9	D
Notes: pc/mi/ln = passenger cars per mile per lane Source: TJKM, 2012.					

Table 3.13-18: Freeway Levels of Service – Year 2035 Plus Project Conditions

No.	Freeway Segment	Lanes (directional)	Volume	Density (pc/mi/ln)	LOS
H	I-5, north of Sperry Avenue	2	4,204	43.8	E
	Mitigated	3		23.1	C

Table 3.13-18 (cont.): Freeway Levels of Service – Year 2035 Plus Project Conditions

No.	Freeway Segment	Lanes (directional)	Volume	Density (pc/mi/ln)	LOS
I	I-5, south of Sperry Avenue	2	3,982	39.2	E
	Mitigated	3		21.7	C
K	I-5, south of Fink Road	2	3,606	32.9	D
Notes: pc/mi/ln = passenger cars per mile per lane Source: TJKM, 2012.					

The results of the analysis indicated that six lanes would be needed on I-5 to accommodate the projected traffic.

Conclusion

Under Cumulative 2035 conditions, the proposed project would a number of intersections to operate at unacceptable levels or contribute additional vehicle trips to intersections projected to operate at unacceptable levels. Mitigation is proposed that would require the project to provide fair-share fees for all feasible improvements necessary to improve operations to acceptable levels.

Additionally, a new interchange is projected to be needed at I-5/Zacharias Road by the time 60 percent of the project is built out. Mitigation is proposed requiring the applicant to contribute its fair share to this improvement, provided that it is programmed into an adopted fee program at the time building permits are sought.

The proposed project would also contribute to a need for an additional lane in each direction on I-5 in the Patterson area. Freeway widening is typically considered a regional improvement and is often funded with a combination of federal, state, and local (i.e., countywide sales tax) funding sources. At the time of this writing, Stanislaus County does not have a countywide sales tax levy for transportation projects, which makes the likelihood of obtaining federal or state dollars for widening I-5 to be very low. Furthermore, widening I-5 is not programmed into any adopted regional or local transportation plan. Thus, even if a local funding source did exist, such dollars could not be applied to this improvement until it is programmed into a plan. Thus, widening I-5 is not considered a feasible improvement.

Although the proposed project would contribute funding for necessary improvements, many of the affected facilities are under the jurisdiction of an agency other than the City of Patterson (e.g., Caltrans or the County of Stanislaus). Additionally, there is uncertainty about the future implementation of the Zacharias Road/I-5 interchange and I-5 widening; therefore, they cannot be found to be foreseeable improvements. As such, the City of Patterson cannot assure that the necessary improvements would be installed as contemplated. Accordingly, the residual significance of this impact is significant and unavoidable.

Offsite Utility Alignments

The offsite utility alignments would not generate any new vehicle trips. As such, they have no potential to affect traffic operations. No impacts would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

- MM TRANS-2a** When intersection operations approach unacceptable levels, the intersection of Sperry Avenue/Rogers Road shall be improved. The improvements shall consist of (1) installing a through and right-turn lane on the eastbound approach; (2) installing two left-turn lanes, a through lane, and two right-turn lanes on the westbound approach; (3) installing a left-turn lane, a through lane, and a right-turn lane on the northbound approach; and (4) installing a through lane on the southbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.
- MM TRANS-2b** When intersection operations approach unacceptable levels, the intersection of Sperry Avenue/Baldwin Road shall be improved. The improvements shall consist of (1) signalizing the intersection; (2) installing a left-turn and a right-turn lane on the eastbound approach; (3) installing a left-turn, a through lane, and two right-turn lanes on the westbound approach; (4) installing two left-turn lanes on the northbound approach; and (5) installing two left-turn lanes on the southbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.
- MM TRANS-2c** When intersection operations approach unacceptable levels, the intersection of Sperry Avenue/Ward Avenue shall be improved. The improvements shall consist of (1) installing a left-turn lane on the eastbound approach, (2) installing a left-turn lane on the northbound approach, and (3) installing a right-turn lane on the southbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.
- MM TRANS-2d** When intersection operations approach unacceptable levels, the intersection of Sperry Avenue/S. Del Puerto Avenue shall be improved. The improvements shall consist of (1) installing a left-turn lane on the eastbound approach and (2) installing a left-turn lane on the westbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.
- MM TRANS-2e** In the event that the intersection of Sperry Avenue/State Route 33 has not been signalized at the time of issuance for the first certificate of occupancy for Phase II of

the proposed project, the intersection shall be signalized. This improvement shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a. This mitigation measure shall not apply if the intersection is signalized prior to issuance for the first certificate of occupancy for Phase II of the proposed project.

MM TRANS-2f When intersection operations approach unacceptable levels, the intersection of Ward Avenue/American Eagle Drive shall be improved. The improvements shall consist of installing a right turn lane on the southbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.

MM TRANS-2g When intersection operations approach unacceptable levels, the intersection of Ward Avenue/SR-33 shall be improved. The improvements shall consist of (1) signalizing the intersection and (2) installing a left-turn lane on the northbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.

MM TRANS-2h When intersection operations approach unacceptable levels, the intersection of Zacharias Road/SR-33 shall be improved. The improvements shall consist of (1) signalizing the intersection, (2) installing two left-turn lanes on the northbound approach, and (3) installing a right-turn lane on the eastbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.

MM TRANS-2i When intersection operations approach unacceptable levels, the intersection of Baldwin Road/SR-33 shall be improved. The improvements shall consist of (1) signalizing the intersection, (2) installing a left-turn lane on the northbound approach, and (3) installing a right-turn lane on the southbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.

MM TRANS-2j When intersection operations approach unacceptable levels, the intersection of Rogers Road/SR-33 shall be improved. The improvements shall consist of (1) signalizing the intersection and (2) installing a left-turn lane on the northbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.

MM TRANS-2k When intersection operations approach unacceptable levels, the intersection of SR-33/Eucalyptus Avenue shall be improved. The improvements shall consist of (1) installing a left-turn and a through lane on the southbound approach and (2) installing

a through lane on the northbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.

MM TRANS-2i When intersection operations approach unacceptable levels, the intersection of Olive Avenue/SR-33 shall be improved. The improvements shall consist of (1) signalizing the intersection, (2) installing a left-turn lane on the eastbound approach, (3) installing a left-turn lane on the westbound approach, (4) installing a left-turn lane on the northbound approach, and (5) installing a left-turn lane on the southbound approach. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.

MM TRANS-2m When intersection operations approach unacceptable levels, the intersection of Walnut Avenue/Sycamore Avenue shall be improved. The improvements shall consist of signalizing the intersection. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.

MM TRANS-2n When intersection operations approach unacceptable levels, but not later than issuance of the first certificate of occupancy for Phase III of the proposed project, the intersection of Rogers Road/Keystone Pacific Parkway shall be improved. The improvements shall consist of signalizing the intersection. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.

MM TRANS-2o When intersection operations approach unacceptable levels, but not later than issuance of first certificate of occupancy for Phase IV of the proposed project, the intersection of Zacharias Road/Rogers Road shall be improved. The improvements shall consist of signalizing the intersection. These improvements shall be programmed into the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.

MM TRANS-2p Prior to issuance of building permits for each project building, the project applicant shall provide fair-share fees for the planned I-5/Zacharias Road interchange, if this improvement is programmed into an adopted fee program. This mitigation measure does not apply if the improvement is not programmed into an adopted fee program at the time building permits are sought. This mitigation measure shall not apply if the planned I-5/Zacharias Road interchange is programmed in the Community Facilities District or other financing mechanism contemplated by Mitigation Measure TRANS-1a.

Level of Significance After Mitigation

Significant unavoidable impact.

Air Traffic Patterns

Impact TRANS-3: The proposed project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

Impact Analysis

This impact will assess the potential for the proposed project to result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

West Patterson Business Park Expansion Project

The project site is located approximately 0.5 mile west of the Patterson Airport and is not located under the most commonly used approach or departure patterns of the airport. The airport is used mainly by small agricultural aircraft and occasionally by small recreational aircrafts. The proposed project does not include any characteristics considered potentially hazardous to aviation (e.g., tall buildings; intense or distracting lighting; major sources of dust, steam, or electrical interference; or features that attract birds). Therefore, no changes to air traffic patterns would occur. Impacts would be less than significant.

Offsite Utility Alignments

The offsite utility alignments would be located underground. As such, they have no potential to affect air traffic patterns. No impacts would occur.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Roadway Safety

Impact TRANS-4: The proposed project would not substantially increase hazards due to a design feature or incompatible uses.

Impact Analysis

This impact will assess the potential for the proposed project to substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

West Patterson Business Park Expansion Project

The proposed project proposes a comprehensive internal roadway network featuring two-lane and four-lane facilities that would provide direct and safe access to all project uses; refer to Exhibit 2-5. Roadway cross sections for major roadways would range from 70 feet to 100 feet, consistent with City standards and industry standards for commercial, industrial, and business park development; refer to Exhibit 2-7. All intersections are proposed at 90-degree angles or near-90-degree angles, maximizing visibility for all approaches. The use of cul-de-sacs is limited to three locations where other options are not feasible; all other streets have through connections. Finally, the project does not propose any unusual features such as tight turn angles or roundabouts/traffic circles that may impair truck circulation. As such, the internal roadway network is consistent with widely accepted standards for safe and efficient circulation.

Agricultural uses exist to the north and east of the project site. Farm equipment has been observed to use roads in the project vicinity, including Rogers Road and Zacharias Road. As discussed in Section 2, Project Description, the proposed project would improve both roadways to add travel lanes and shoulder. After the improvements are completed, farm equipment could safely travel on the shoulder of both roadways unless otherwise prohibited. This would ensure that the proposed project would not create safety hazards associated with incompatible uses.

Impacts would be less than significant.

Offsite Utility Alignments

The offsite utility alignments would not generate any new vehicle trips. As such, they have no potential to affect roadway safety. No impacts would occur.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Emergency Access

Impact TRANS-5: The proposed project may result in inadequate emergency access.

Impact Analysis

This impact will assess the potential for the proposed project to result in inadequate emergency access.

West Patterson Business Park Expansion Project

As shown in Exhibit 2-5 in Section 2, Project Description, all project uses would be served with at least two points of vehicular access suitable for use by large emergency response apparatus such as fire engines, consistent with California Fire Code requirements.

Of note, the portion of the project located between the California Aqueduct and I-5 would be primarily served by a roadway connection across the waterway, with an Emergency Vehicle Access connection to Del Puerto Canyon Road; refer to Exhibit 2-8 in Section 2, Project Description. The Emergency Vehicle Access would follow an existing unpaved road that crosses under I-5. The applicant would improve the road to provide an all-weather surface and control access to the road with a gate to prevent unauthorized use. The provision of the Emergency Vehicle Access would ensure that the area between I-5 and the California Aqueduct is served with a minimum two points of access in accordance with the California Fire Code's requirements.

In recognition that the Patterson Fire Department must deem the Emergency Vehicle Access to be acceptable, Mitigation Measure HAZ-4 requires the City of Patterson to review and approve the proposed emergency vehicle access points in accordance with California Fire Code requirements. With the implementation of this mitigation measure, impacts would be less than significant

Offsite Utility Alignments

The offsite utility alignments would be located underground. As such, they have no potential to affect emergency response. No impacts would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure HAZ-4.

Level of Significance After Mitigation

Less than significant impact.

Public Transit, Bicycles, and Pedestrians

Impact TRANS-6: The proposed project may conflict with adopted policies, plans, or programs supporting alternative transportation.

Impact Analysis

This impact will assess the potential for the proposed project to conflict with adopted policies, plans, or programs supporting alternative transportation.

West Patterson Business Park Expansion Project

The project site is located on the west side of Patterson, adjacent to I-5, in an area with limited pedestrian and bicycle facilities and no existing transit facilities or service.

The proposed project consists of the development of 13.47 million square feet of business park, general commercial, and light industrial uses over a period of 20 years. As shown in the roadway cross sections on Exhibit 2-7 in Section 2, Project Description, pedestrian facilities are contemplated to be installed along the various roadways serving the project, which would facilitate pedestrian mobility within the project and to and from adjoining land uses such as Villa del Lago. Additionally, project roadways would be suitable for use for bicycle travel, although they may not necessarily be officially designated as bicycle facilities. Lastly, the project would preserve public access to the roadways along the California Aqueduct and Delta-Mendota Canal, which can be used by pedestrians and bicyclists.

TJKM identified several Transportation Demand Management measures that may be applicable to tenants of the proposed project. These measures include:

- Pedestrian facilities (e.g., internal pedestrian facilities that provide connectivity to sidewalks or nearby land uses).
- Bicycle parking, as required by the Municipal Code.
- Alternative (flex-time) work schedules that allow non-peak travel by employees.
- Commute Trip Reduction Programs that provide incentives for employees to carpool, use transit, ride bicycles, or use other modes of non-single-occupant vehicle transportation.
- Multi-Modal Transportation Guides that provide information to employees regarding various routes to a particular location via different modes of transportation.
- The establishment of a Transportation Management Association for a large employer or a group of employers. The association would provide transportation (e.g., employee shuttles) for employees of companies that participate in the organization.
- Telecommute (or work-from-home) options for employees who can work remotely.

The applicability of the afore-listed Transportation Demand Management measures will vary by project use. For example, a large employer may be better equipped to participate in a Transportation Management Association than a small employer. Likewise, an information technology business may have the means to allow employees to work from home or implement flex-time schedules, while a distribution center may not. In recognition of this, Mitigation Measure TRANS-6 requires the project applicant to prepare and submit documentation to the City of Patterson demonstrating that (1) at least one or more of the previously listed Transportation Demand Management measures have been integrated into the use, or (2) explaining why such a measure is not feasible (such as workforce characteristics, facility operational characteristics, health and safety, etc.). With the implementation of this mitigation measure, impacts would be less than significant.

Offsite Utility Alignments

The offsite utility alignments would be located underground. As such, they have no potential to affect alternative transportation. No impacts would occur.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-6 Prior to issuance of the first certificate of occupancy for each project use, the applicant shall prepare and submit documentation to the City of Patterson demonstrating that feasible Transportation Demand Management measures have been incorporated. The documentation shall either (1) show how at least one or more of the following Transportation Demand Management measures has been integrated into the use or (2) explain why such a measure is not feasible (such as workforce characteristics, facility operational characteristics, health and safety, etc.):

- Pedestrian facilities (e.g., internal pedestrian facilities that provide connectivity to sidewalks or nearby land uses)
- End-of-trip bicycle facilities (e.g., racks, lockers, changing/locker rooms, shower facilities)
- Alternative (flex-time) work schedules that allow non-peak travel by employees
- Commute Trip Reduction Programs that provide incentives for employees to carpool, use transit, ride bicycles, or use other modes of non-single-occupant vehicle transportation.
- Multi-Modal Transportation Guides that provide information to employees regarding various routes to a particular location via different modes of transportation
- The establishment of a Transportation Management Association for a large employer or a group of employers. The association would provide transportation (e.g., employee shuttles) for employees of companies that participate in the organization.
- Telecommute (or work-from-home) options for employees who can work remotely.
- Any other Transportation Demand Management measure not specified on this list.

Level of Significance After Mitigation

Less than significant impact.

SECTION 4: CUMULATIVE EFFECTS

4.1 - Introduction

CEQA Guidelines Section 15130 requires the consideration of cumulative impacts within an EIR when a project's incremental effects are cumulatively considerable. Cumulatively considerable means that "... the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." In identifying projects that may contribute to cumulative impacts, the CEQA Guidelines allow the use of a list of past, present, and reasonably anticipated future projects, producing related or cumulative impacts, including those which are outside of the control of the lead agency.

In accordance with CEQA Guidelines Section 15130(b), "... the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, the discussion need not provide as great [a level of] detail as is provided for the effects attributable to the project alone." The discussion should be guided by standards of practicality and reasonableness, and it should focus on the cumulative impact to which the identified other projects contribute rather than on the attributes of other projects that do not contribute to the cumulative impact.

The proposed project's cumulative impacts were considered in conjunction with other proposed and approved projects in the City of Patterson and nearby portions of unincorporated Stanislaus County. Table 4-1 provides a list of the other projects considered in the cumulative analysis.

Table 4-1: Cumulative Projects

Jurisdiction	Project	Location	Characteristics	Status
City of Patterson	West Patterson Business Park	Sperry Avenue/Baldwin Road (northwest quadrant)	9 million square feet business park/light industrial	Approved; partially developed
	Patterson Gardens	Sperry Avenue/ Baldwin Road (southeast quadrant)	940 single-family dwelling units; 47 senior dwelling units; recreational facilities; new school site	Approved; partially developed
	Villages at Patterson	State Route 33/ Walnut Avenue (northwest quadrant)	3,100 dwelling units; 723,800 square feet commercial/office/ light industrial; 267,900 square feet public/quasi-public	Approved; not constructed
	Patterson Walmart	Sperry Avenue/ Ward Avenue (southwest quadrant)	178,000-square-foot retail center anchored by a Walmart store	Approved; under construction

Table 4-1 (cont.): Cumulative Projects

Jurisdiction	Project	Location	Characteristics	Status
Unincorporated Stanislaus County	West Park Logistics Center	Crows Landing Naval Air Facility	Industrial, distribution, inland port, business park, airport, solar farm, and public facilities on 2,796 acres	Proposed
	Diablo Grande	Diablo Grande Parkway/Oak Flat Road	2,000 dwelling units; winery; two golf courses	Approved; partially developed

Source: City of Patterson, 2012.

4.2 - Cumulative Impact Analysis

CEQA requires the analysis of a project's incremental effect combined with the effects of other past, present, and probable future projects. Such an effect is known as a cumulative impact.

In a cumulative impacts analysis, there are two key questions:

- (1) Is the combined impact of the project and other projects significant, and
- (2) Is the project's incremental effect cumulatively considerable?

A lead agency may find that the cumulative impact that will result from the combination of the project's incremental impact and the effects of other projects is not significant. Alternatively, a lead agency may find that the project's incremental effect is not cumulatively considerable and that the project's cumulative effect is therefore not significant. Note that in some cases, the project's individual impact will be insignificant, but a related cumulative impact will be significant.

The cumulative impact analysis below is guided by the requirements of CEQA Guidelines Section 15130. Other key principles established by this section include:

- A cumulative impact only occurs from impacts caused by the proposed project and other projects. An EIR should not discuss impacts that do not result from the proposed project.
- When the combined cumulative impact from the increment associated with the proposed project and other projects is not significant, an EIR need only briefly explain why the impact is not significant; detailed explanation is not required.
- An EIR may determine that a project's contribution to a cumulative effect impact would be rendered less than cumulatively considerable if a project is required to implement or fund its fair share of mitigation intended to alleviate the cumulative impact.

The cumulative impact analysis that follows relies on these principles as the basis for determining the significance of the proposed project's cumulative contribution to various impacts.

4.2.1 - Aesthetics, Light, and Glare

The geographic scope of the cumulative aesthetics, light, and glare analysis is the area surrounding the project site. This is the area within view of the project; therefore, the area most likely to experience changes in visual character or experience light and glare impacts.

The proposed project consists of the development of approximately 13.47 million square feet of light industrial, business park, and general commercial uses and associated infrastructure on approximately 880 net acres of the project site. The proposed project's structures would employ contemporary architecture typical of that for business/industrial parks and general commercial retail centers.

The project site is located within an area that contains existing urban development, including the partially developed West Patterson Business Park to the east and the Villa del Lago highway commercial center to the south. The proposed project would be guided by a Master Development Plan that establishes standards for architecture, landscaping, signage, and similar items. Adherence to the Master Development Plan's standards would ensure that the project would be compatible with the existing visual character of the project vicinity.

As shown in Table 4-1, there are several other development projects in the project vicinity that have the potential to alter the visual character of the area. These projects would be subject to design and landscaping requirements to ensure that they do not degrade visual character and comply with applicable General Plan and Zoning Ordinance standards.

The proposed project would introduce new sources of light and glare to the project vicinity. As previously noted, the proposed project would be guided by a Master Development Plan that establishes standards for exterior lighting fixtures and illuminated signage. Adherence to the Master Development Plan's standards would ensure that the project's new sources of light and glare would be limited to appropriate areas and avoid creating substantial spillover effects. Thus, it can be reasoned that surrounding land uses would not be exposed to substantial sources of light and glare from the proposed project. Other projects that propose new sources of illumination would be required to demonstrate that spillover effects are avoided or minimized to the maximum extent feasible. As such, the proposed project would not have the potential to have a cumulative contribution to a light and glare impact.

4.2.2 - Agricultural Resources

The geographic scope of the cumulative agricultural resources analysis is Stanislaus County. Agricultural resources are evaluated here in the context of countywide resources, because the City has adopted a number of policies and plans that are designed to facilitate smart growth and preserve agricultural resources within its boundaries, with a view toward how such growth sits in the context

of the surrounding unincorporated areas; therefore, it is appropriate to use this as the basis for assessing cumulative impacts.

Several of the projects listed in Table 4-1 would occur on land mapped as Important Farmland and, therefore, would have the potential to convert farmland to non-agricultural use. The proposed project would convert 1,108.69 acres of Important Farmland to urban uses. Two of the 26 parcels that comprise the project site are encumbered by active Williamson Act contracts. Notices of Non-Renewal have been filed for the two Williamson Act contracts, which expire on December 31, 2012 and December 31, 2012 respectively. Most of the project sites listed in Table 4-1 are within the current or future boundaries of the City of Patterson and therefore are contemplated for urban development. (Note that Diablo Grande and West Park Logistics Center are outside of the Patterson city limits and Planning Area.) The EIR for the City of Patterson General Plan found that conversion of prime agricultural land, including the project site, to urban uses to be a significant and unavoidable impact. As part of adopting the City General Plan, the Patterson City Council adopted findings of fact and a statement of overriding consideration indicating that urban development was of greater benefit to the community than preserving agricultural land within city limits. Although conversion of the project area to urban uses would reflect the land use assumptions contained in the City of Patterson General Plan, farmland is an important resource to the region, and direct conversion of Important Farmland to urban land uses would be considered a significant impact under LESA methodology. Mitigation is proposed requiring the preservation of Important Farmland at a 1:1 ratio; however, the mitigation does not provide certainty that net new Important Farmland acreage would be created or the productivity of existing non-Important Farmland could be improved such that it could be re-classified as Important Farmland. Other projects may also be required to mitigate for the conversion of Important Farmland. Similar to the proposed project, mitigation may not provide certainty regarding the availability of Important Farmland. As such, the proposed project would contribute to cumulative impacts on conversion of Important Farmland.

The project in combination with the buildout of past, present, and probable future projects would not create pressure to prematurely convert adjacent farmland to non-agricultural uses. All of the lands immediately adjacent to the project site are within the Patterson General Plan Planning Area or are currently within the Patterson city limits, signifying that they are ultimately anticipated to be converted to urban use at some point in the future. Furthermore, it would be expected that the farmland areas west and north of the project site would not convert to urban use until after the proposed project is built out, which is expected to take 20 to 30 years. The proposed project and probable future projects therefore do not combine to create a significant cumulative effect.

4.2.3 - Air Quality and Greenhouse Gas Emissions

The geographic scope of the cumulative air quality analysis is the San Joaquin Valley Air Basin, which encompasses all or portions of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings,

Tulare, and Kern counties. Air pollution is regarded as a regional issue; therefore, this would be the area most likely to be impacted by project emissions.

The San Joaquin Valley Air Pollution Control District (SJVAPCD) does not include methodologies for assessing the effect of a project on consistency with such plans. However, as required by California law, city and county general plans contain a land use element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designates locations for land uses to regulate growth. Growth estimates used in a general plan often come from the State of California's Department of Finance. The air quality plan uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then vehicle miles traveled (VMT), which are then provided to SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP were based on land uses and growth projections from area general plans. These emissions form the emissions budget used by the SJVAPCD to demonstrate air quality conformity for the Regional Transportation Plan. The future emissions, combined with emissions from all other sources, are modeled in the SJVAPCD's regional air quality models to determine the reductions required to attain the air quality standards by the applicable federal deadline. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards.

Although the proposed project is significant with the growth projections contained in the City of Patterson General Plan, it is not necessarily consistent with the projections contained in the AQPs because adoption of the General Plan occurred after the latest AQPs were adopted. As such, the proposed project is not consistent with the AQP. Other projects may or may not be consistent with the land use and growth projections set forth in the applicable General Plan. Because the proposed project is not consistent with the growth assumptions contained in the AQPs, it would have a cumulative contribution to inconsistency with the clean air plans.

All of the projects listed in Table 4-1 would result in new air emissions during construction or operations (or both). The proposed project would emit construction and operational emissions at levels that would not exceed the SJVAPCD thresholds after the implementation of feasible emissions reductions measures. Other projects that exceed SJVAPCD thresholds would also be required to implement feasible emissions reductions measures. Because the proposed project's emissions would not exceed SJVAPCD thresholds, it would not cumulatively contribute to impacts related to air quality violations.

All of the projects listed in Table 4-1 would result in some net increase of criteria pollutants for which the Air Basin is classified as "nonattainment." Because of the size and scope of the proposed project, its net increase is considered cumulatively considerable. Emissions of criteria pollutants from other projects may or may not be considered cumulatively considerable. Because the proposed project's net increase is cumulatively considerable, it would have a cumulative contribution to nonattainment of criteria pollutants.

Several of the projects listed in Table 4-1 could potentially release sources of objectionable odors. The proposed project may include an onsite wastewater treatment plant and, thus, may be such a source of objectionable odors. Mitigation is proposed requiring the implementation of Odor Control Best Management Practices during operations, which would reduce impacts to a level of less than significant. Other projects that release objectionable odors would also be required to implement feasible odor reduction measures. Because the proposed project's odors would not be considered significant, it would not cumulatively contribute to impacts related to objectionable odors.

Other projects would also emit new greenhouse gas emissions. The proposed project was found to be able to achieve a more than 30-percent reduction in greenhouse gas emissions relative to "business-as-usual" conditions and, therefore, to exceed the SJVAPCD's 29-percent reduction target for greenhouse gas emissions. Other projects would also be required to meet this target. Because the proposed project can achieve this objective, it would not have a related cumulative considerable impact.

All other project air quality impacts were found to be less than significant and did not require mitigation (e.g., sensitive receptors). Other projects that result in similar impacts would be required to mitigate for their impacts. Because the proposed project can mitigate all of these remaining air quality impacts to a level of less than significant, it would not have a related cumulative considerable impact.

4.2.4 - Biological Resources

The geographic scope of the cumulative biological resources analysis is the project vicinity. Biological impacts in an agricultural setting, where foraging habitats and similar areas are disrupted by farming activities, tend to be localized. The project site is surrounded by I-5 (west), agricultural uses (north and east), and urban uses (east and south). Therefore, the area near the project site would be the area most affected by project activities (generally within a 0.5-mile radius).

Potential project-level impacts on special-status plants and wildlife are limited to the burrowing owl, loggerhead shrike, migratory birds, Swainson's hawk, San Joaquin kit fox, and western red and hoary bats; therefore, the project would not have the potential to contribute to the cumulative loss of any other special-status plant or wildlife species. The proposed project would implement standard mitigation for the previously mentioned special-status species, which would involve pre-construction surveys, and if necessary, implementation of avoidance measures, which would reduce impacts to a level of less than significant. Most of the other projects listed in Table 4-1 are located within the City of Patterson and, therefore, would be required to mitigate for impacts on special-status species in a manner similar to the proposed project. As such, the proposed project, in conjunction with other projects, would not have a cumulatively considerable contribution to impacts on special-status species.

The proposed project would involve the construction of a new crossing of Del Puerto Creek and may also involve the construction of storm drainage improvements within the waterway. As such, Mitigation Measure BIO-2 requires the project applicant to conduct a wetland delineation to determine the extent of jurisdictional features on the project site that meet federal or state definitions of wetlands and sensitive natural communities. Most of the other projects listed in Table 4-1 are located within the City of Patterson and, therefore, would not be expected to impact sensitive natural communities or riparian habitat. However, those projects that do so would be expected to implement similar mitigation measures. As such, the proposed project, in conjunction with other projects, would not have a cumulatively considerable contribution to impacts to sensitive natural communities and riparian habitat.

Del Puerto Creek contains and is abutted by hydrophytic plant species; there are potential associated wetlands that would be classified as waters of the United States pursuant to the Clean Water Act. As such, Mitigation Measure BIO-2 requires the project applicant to conduct a wetland delineation to determine whether the project site contains features that meet federal definitions of wetlands and mitigate for the loss of such features if present. Other projects listed in Table 4-1 would also be required to mitigate for the loss of wetlands if such features are determined to be impacted by their implementation. As such, the proposed project, in conjunction with other projects, would not have a cumulatively considerable contribution to impacts to federally protected wetlands.

Del Puerto Creek is a potential wildlife movement corridor within the project site. To ensure that the proposed project would not adversely affect the wildlife movement corridor attributes of Del Puerto Creek, Mitigation Measure BIO-4 requires that a minimum 100-foot setback be maintained from the high water mark, or outside edge of existing riparian vegetation, whichever is greater, pursuant to City of Patterson General Plan Policy BIO-34. Other projects listed in Table 4-1 within the City of Patterson would also be required to mitigate for potential impacts to wildlife movement corridors determined to be impacted by their implementation. As such, the proposed project, in conjunction with other projects, would not have a cumulatively considerable contribution to impacts to wildlife movement corridors.

The proposed project may affect sensitive species and the Del Puerto Creek corridor, thereby conflicting with Patterson General Plan Policy NR-3.2 regarding the protection of sensitive species and NR-3.7 regarding the protection of creek corridors. However, implementation of mitigation would ensure that the proposed project is consistent with local biological ordinances and policies. Other projects listed in Table 4-1 would also be required to mitigate for potential conflicts with local biological ordinances or policies. As such, the proposed project, in conjunction with other projects, would not have a cumulatively considerable contribution to impacts to conflicts with local biological ordinances.

4.2.5 - Cultural Resources

The geographic scope of the cumulative cultural resources analysis is the project vicinity. Cultural resource impacts tend to be localized because the integrity of any given resource depends on what occurs only in the immediate vicinity around that resource, such as disruption of soils; therefore, in addition to the project site itself, the area near the project site would be the area most affected by project activities (generally within a 500-foot radius).

Construction activities associated with development projects in the project vicinity may have the potential to encounter undiscovered cultural resources. These projects would be required to mitigate for impacts through compliance with applicable federal and state laws governing cultural resources. Even if a significant cumulative impact could be found, the proposed project would not make a cumulatively considerable impact. Most of the project site is used for agriculture and has been previously disturbed by agricultural activities such as disking and tilling of the soil. As such, the project site is in a disturbed state, which limits the potential for undiscovered resources to be encountered. The project site contains three historic resources; however, none of these resources would be impacted by project development. Although there is the possibility that previously undiscovered resources could be encountered by subsurface earthwork activities, the implementation of standard construction mitigation measures would ensure that undiscovered cultural resources are not adversely affected by project-related construction activities, which would prevent the destruction or degradation of potentially significant cultural resources in the project vicinity. Given the low potential for disruption, and the comprehensiveness of mitigation measures that would apply to this project and those in the vicinity, the residual, insignificant impacts of the projects would not combine to make a significant cumulative impact and, even if the combined impact was significant because of substantial resources on a different project site, the proposed project would not make a cumulatively considerable contribution given previous disruptions to its ground and the lack of any known resource within its boundaries.

4.2.6 - Geology, Soils, and Seismicity

The geographic scope of the cumulative geology, soils, and seismicity analysis is the project vicinity. Adverse effects associated with geologic, soil, and seismic hazards tend to be localized, and the area near the project site would be the area most affected by project activities (generally within a 0.25-mile radius).

Development projects in the project vicinity may have the potential to be exposed to seismic hazards. However, there is a less than significant potential of the projects in combination to expose people or structure to substantial adverse effects, including the risk of loss, injury, or death in the event of a major earthquake; fault rupture; ground shaking; seismic-related ground failure; landslide; or liquefaction. There are no active or potentially active faults in the City or project area, and although the project site might be exposed to strong ground shaking during an earthquake from faults that lie further afield, continued construction of buildings and other structures consistent with current

development codes would minimize the potential for severe damage and loss of life. Seismic design criteria account for peak ground acceleration, soil profile, and other site conditions, and they establish corresponding design standards intended primarily to protect public safety and secondly to minimize property damage.

Regarding liquefaction and soil stability, the topography of the project site and the sites of the projects listed in Table 4-1 is relatively flat. At the same time, there is only a remote possibility that disruption of soils at one site would increase the risk of liquefaction and soil stability at another site, as soil stability is largely unaffected by instability at another site, especially in cases where there exist intervening roads between sites, as occurs here. Thus, there is little potential of projects to cumulatively contribute to liquefaction and soil stability impact, and thus a less than significant cumulative impact would result.

Regarding soil erosion, groundbreaking could lead to increased erosion rates on site soils, which could cause unstable ground surfaces and increased sedimentation in nearby streams and drainage channels. However, project construction activities would implement standard stormwater pollution prevention mitigation measures to ensure that earthwork activities do not result in substantial erosion offsite. This mitigation, in turn, would have to comply with the National Pollution Discharge Elimination System (NPDES) stormwater permitting program, which regulates water quality originating from construction sites. The NPDES program, which governs projects statewide (and nationwide), requires the preparation and implementation of Stormwater Pollution Prevention Programs for construction activities that disturb more than 1 acre, and the implementation of Best Management Practices that ensure the reduction of pollutants during stormwater discharges, as well as compliance with all applicable water quality requirements. Thus, given the proposed project and nearby projects would have to comply with federal and state regulations that are designed to minimize impacts to projects on a wide geographic scale, this project would make no cumulatively considerable contribution to any significant cumulative impact.

4.2.7 - Hazards and Hazardous Materials

The geographic scope of the cumulative hazards and hazardous materials analysis is the project vicinity, which includes areas within a 0.50-mile radius of the project site. Adverse effects of hazards and hazardous materials tend to be localized because the impacts of spills and releases usually do not travel beyond 0.50 mile. Therefore, the area near the project site would be the area most affected by project activities.

The project site does not contain any recognized environmental constraints such as asbestos-containing building materials, lead-based paint, aboveground storage tanks, underground storage tanks, or soil contamination. Additionally, the proposed project's operational characteristics would not involve the use, storage, transport, or disposal of large quantities of hazardous materials. Finally, the proposed project does not have any characteristics that would interfere with aviation activities at Patterson Airport. As such, the proposed project would not have any significant impacts on hazards

or hazardous materials. Other projects that may result in potential exposure to hazardous materials would be required to implement mitigation measures to protect public health and safety. However, most of the projects listed in Table 4-1 would not involve the use large quantities of hazardous materials during operations or involve characteristics that could expose surrounding land uses to hazardous air emissions or materials, which precludes the likelihood of significant impacts. Therefore, the proposed project, in conjunction with other projects, would not have a cumulatively considerable contribution.

4.2.8 - Hydrology and Water Quality

The geographic scope of the cumulative hydrology and water quality analysis is the Patterson area. Hydrologic and water quality impacts concern local waterways and groundwater sources, which affect the greater Patterson area.

In terms of construction, implementation of all development within the project site would require grading and construction. While potential to degrade water quality exists, the projects would have to comply with the NPDES stormwater permitting program, which regulates water quality originating from construction sites. The NPDES program requires the preparation and implementation of Stormwater Pollution Prevention Programs for construction activities that disturb more than 1 acre, and the implementation of Best Management Practices that ensure the reduction of pollutants during stormwater discharges as well as compliance with all applicable water quality requirements.

From an operational standpoint, the proposed project, in combination with other planned and approved projects, would not violate water quality standards or waste discharge requirements because it would implement the pollution prevention measures listed in Mitigation Measure HYD-1b.

All future development projects in the project vicinity would be required to provide drainage facilities that collect and detain runoff such that offsite releases are controlled and do not create flooding. The proposed project would install onsite stormwater infrastructure, which would provide adequate capacity for the proposed project's runoff. Therefore, the proposed project, in conjunction with other planned and approved projects, would not have a cumulatively considerable impact on storm drainage.

The proposed project would develop lands adjacent to the California Aqueduct and Delta-Mendota Canal and construct two new roadway crossings across the Delta-Mendota Canal. Implementation of mitigation would require coordination with appropriate agencies for each canal. Other projects may have the potential to impact the California Aqueduct and Delta-Mendota Canal and would be required to coordinate with the appropriate agencies and abide by applicable regulations. As such, the proposed project in conjunction with other planned and approved projects would not result in cumulatively considerable impacts the California Aqueduct and Delta-Mendota Canal.

4.2.9 - Land Use

The geographic scope of the cumulative land use analysis is the City of Patterson General Plan Planning Area. Land use decisions are made at the City level; therefore, the City of Patterson General Plan Planning Area is an appropriate geographic scope.

Impacts involving land use plans or policies would not combine to result in cumulative impacts. The determination of significance for impacts related to whether a project would conflict with any applicable land use plan or policy adopted for the purpose of reducing or avoiding environmental impacts. Such a conflict is site-specific and would be addressed on a project-by-project basis.

The proposed project consists of the development of approximately 13.47 million square feet of light industrial, business park, and general commercial uses and associated infrastructure. The proposed project's land use activities are consistent with the intended uses of the City of Patterson's General Plan "Light Industrial" and "General Commercial" land use designations and the Zoning Ordinance's "West Patterson Industrial Business Park (WPIBP)," "West Patterson Light Industrial (SPLI)," and "General Commercial (GC)" zoning districts. As such, the proposed project would be consistent with the General Plan and Municipal Code.

The proposed project would be consistent with the Stanislaus County Airport Land Use Commission Plan's relevant standards for airport land use compatibility as it relates to the Patterson Airport and California Government Code Section 56668, which establishes factors Local Agency Formation Commission agencies must use in reviewing adjustments to jurisdictional boundaries.

Thus, the proposed project, in conjunction with other planned or approved projects, would not have a cumulatively considerable impact on land use.

4.2.10 - Noise

The geographic scope of the cumulative noise analysis is the project vicinity, including surrounding sensitive receptors. Noise impacts tend to be localized because ambient noise generally tends to dissipate within 0.25 mile, and existing noise from roadways tends to have a canceling effect on noise emanating from a project site; that is, the logarithmic properties of noise and distance usually mean there are no additive effects. Therefore, the area near the project site (generally 0.25 mile) would be the area most affected by project activities.

Construction activities associated with the proposed project would result in substantial sources of noise. As discussed in Section 3.10, Noise, the construction activities for proposed project would not exceed the noise thresholds for any receivers. The timing of construction activities associated with other development projects would overlap minimally, if at all, with the proposed project.

Furthermore, because noise is a highly localized phenomenon, even if construction activities did overlap in time with the proposed project, the intervening distance and roadway noise would diminish any additive effects. Construction activities at these other planned and approved projects would be

required to take place during daytime hours, and the City and project applicant would be required to evaluate construction noise impacts and implement mitigation, if necessary, to minimize noise impacts. Given these distances and the intervening structures and vegetation, no significant cumulative construction noise impact would be expected. Therefore, it is reasonable to conclude that construction noise from the proposed project would not combine with noise from other development projects to cause cumulatively considerable noise impacts.

The proposed project's construction and operational vibration levels would not exceed annoyance thresholds. Because vibration propagates in waves through the soil, multiple pieces of equipment operating simultaneously would each produce vibration waves in different phases that typically would not increase the magnitude of the vibration. Furthermore, vibration is a highly localized phenomenon, and tends to dissipate to insignificant levels within dozens of feet, as explained in Section 3.10, Noise; thus, there would be no possibility for vibration associated with the project to combine with vibration from other projects because of their distances from the project site. Therefore, the proposed project would not contribute to a cumulatively considerable vibration impact.

As discussed in Impact NOI-3 in Section 3.10, Noise, the proposed project's vehicular trips would not make a substantial incremental contribution to ambient noise levels. These noise levels account for existing vehicle trips as well as vehicle trips from future projects. In addition, other projects would be required to evaluate offsite roadway noise and, if necessary, mitigate for such impacts. The proposed project's contribution to offsite vehicular noise levels would not exceed the applicable thresholds of significance, which take into account the existing noise levels and future 2035 without project noise levels. Thus, the proposed project would not contribute to a cumulatively considerable increase in ambient roadway noise.

As shown in Impact NOI-4 in Section 3.10, Noise, non-transportation noise would not exceed significance thresholds at any receivers. As explained in the discussion of cumulative construction impacts, these insignificant impacts resulting from the project would not cumulate with noise impacts from other projects in any significant way. Note that other projects would be required to mitigate for non-transportation noise impacts at nearby sensitive receptors in accordance with City standards. As such, the proposed project, in conjunction with other projects, would not make a cumulatively considerable contribution to any permanent increases in ambient noise levels associated with stationary noise sources in the project vicinity.

Impact NOI-5 in Section 3.10, Noise found that the combined transportation and non-transportation noise levels would exceed city standards at nearby sensitive receptors. These noise levels account for existing transportation and non-transportation noise sources as well as transportation and non-transportation noise from future projects. In addition, other projects would be required to evaluate transportation and non-transportation noise and, if necessary, mitigate for such impacts. The proposed project's contribution to transportation and non-transportation noise would exceed the applicable thresholds of significance, which take into account the existing noise levels, and which are

found to be significant and unavoidable. As such, the proposed project, in conjunction with other projects, would cause a cumulatively considerable, permanent increase in ambient noise levels in the project vicinity.

4.2.11 - Population and Housing

The geographic scope of the cumulative public services analysis is the City of Patterson.

The proposed project is anticipated to create employment opportunities of 8,978 full-time workers at buildout in 2034. The City of Patterson General Plan projects a buildout population of 66,673 persons sometime after 2030 or an increase of more than 46,000 persons over the same time period that the proposed project would be built out. As such, the proposed project would likely employ Patterson residents and would not require substantial amounts of employees to relocate to Patterson. Furthermore, the proposed project is consistent with the Patterson General Plan Land Use designations and therefore growth resulting from development of the project area is anticipated. Other projects included in Table 4-1 may result in population growth; however, they would be required to demonstrate consistency with their respective land use designations and therefore would be consistent with planned growth. As such, the proposed project, in conjunction with other projects, would not have a cumulatively considerable impact on population or housing.

4.2.12 - Public Services and Utilities

The geographic scope of the cumulative public services analysis is the service area of each of the providers serving the proposed project. Because of differences in the nature of the public service and utility topical areas, they are discussed separately.

Fire Protection and Emergency Medical Services

The geographic scope of the cumulative fire protection and emergency medical services analysis is the Patterson Fire Department service area, which encompasses the City of Patterson. Those projects listed in Table 4-1 that lie in the City of Patterson have the potential to combine with the project to exert cumulative impacts.

The Fire Department indicated in a written response that the proposed project would be anticipated to result in a 10- to 15-percent increase in calls for service, thereby creating the need for additional personnel and fire station. Implementation of mitigation would require the project applicant to provide fire protection development fees. In addition, mitigation would require the applicant to make an irrevocable offer to dedicate land for a future fire station prior to recordation of the final map. Other projects listed in Table 4-1 would be required to implement similar measures to ensure adequate levels of fire protection are maintained. As such, the proposed project, in conjunction with other projects, would not have a cumulatively considerable impact on fire protection and emergency medical services.

Police Department

The geographic scope of the cumulative police protection analysis is the Patterson Police Services jurisdictional area, which encompasses the City of Patterson. Those projects listed in Table 4-1 that lie in the City of Patterson have the potential to combine with the project to exert cumulative impacts.

The Police Services indicated in a written response that the proposed project would be anticipated to result in an increase in calls for service and, therefore, the need for additional police personnel. Implementation of mitigation would require the project applicant to provide police services development fees to ensure adequate levels of service are maintained. Other projects listed in Table 4-1 would be required to implement similar measures to ensure adequate levels of police protection are maintained. As such, the proposed project, in conjunction with other projects, would not have a cumulatively considerable impact on police services.

Water

The geographic scope of the cumulative water analysis is the City of Patterson water service area, which encompasses the city limits.

At buildout, the proposed project is estimated to demand 1,405 acre-feet of water per year. A Water Supply Assessment was prepared by H2O Group, which indicated that the proposed project's water demand would be within the City of Patterson's projected available supply through 2032, which accounts for demand from existing users and future growth. As such, adequate water supplies are anticipated to be available to serve the proposed project, as well as other projects in the service area. Nonetheless, because long-term water supply is a significant concern in California, the proposed project would reduce its demand on water supply through the implementation of indoor and outdoor water conservation measures. These measures would reduce overall project demand for potable water and ensure that long-term water supply impacts are less than significant. All future projects also would be required to demonstrate that potable water supply sources are available, and these projects may be required to implement water conservation measures. Therefore, the proposed project, in conjunction with other planned and approved projects, would not have a cumulatively considerable impact on potable water supply.

Wastewater

The geographic scope of the cumulative wastewater analysis is the Patterson water quality control facility service area, which collects wastewater from Patterson. Those projects listed in Table 4-1 that lie in the service area have the potential to combine with the project to exert cumulative impacts.

All future projects would be required to demonstrate that sewer service is available to ensure that adequate sanitation can be provided. At buildout, the proposed project would generate 533,900 gallons of effluent per day. A Sanitary Sewer Analysis was prepared by GDR Engineering concluded that existing sewer pipes have adequate capacity to accommodate the proposed project. Furthermore, adequate capacity is available at the City's Water Quality Control Facility to accommodate the

project. Furthermore, Patterson is currently planning for the expansion of the Water Quality Control Facility's treatment capacity. The increased capacity would be expected to provide adequate capacity to serve the projects listed in Table 4-1 within the service facility's service area. However, as a fallback option in the event that downstream conveyance capacity or treatment capacity is not available, the applicant has proposed to develop an onsite, privately owned and operated wastewater treatment plant that could serve the entire project. This would obviate the need for reliance on the City wastewater collection and treatment system and any potential cumulative impacts in this regard. Therefore, the proposed project, in conjunction with other planned and approved projects, would not have a cumulatively considerable impact on wastewater.

Storm Drainage

The geographic scope of the cumulative storm drainage analysis is the City of Patterson's storm drainage system, which generally encompasses lands within the city limits. Those projects listed in Table 4-1 that lie in the drainage system service area have the potential to combine with the project to exert cumulative impacts.

All future development projects in the project vicinity would be required to provide drainage facilities that collect and detain runoff such that offsite releases are controlled and do not create flooding. The proposed project would install onsite stormwater infrastructure that would provide adequate capacity for the proposed project's runoff. Therefore, the proposed project, in conjunction with other planned and approved projects, would not have a cumulatively considerable impact on storm drainage.

Solid Waste

The geographic scope of the cumulative solid waste analysis comprises those projects contributing to the Fink Road Landfill near Crows Landing.

The landfill has a remaining capacity of 10 million cubic yards. Future development projects would generate construction and operational solid waste and, depending on the volumes and end uses, would be required to implement recycling and waste reduction measures. The proposed project is anticipated to generate 36,680 cubic yards of solid waste during construction and 45,261 cubic yards annually during operations. Mitigation is included that would require the project applicant to retain a qualified contractor to perform construction and demolition debris recycling and to provide the installation of onsite facilities necessary to collect and store recyclable materials and green waste. These practices would divert substantial quantities of materials from the solid waste stream and contribute to conserving landfill capacity, thereby extending the operational life of such facilities. Thus, the contribution of the proposed project would not be cumulatively considerable.

Energy

The geographic scope of the cumulative energy analysis is the Turlock Irrigation District (TID) electricity service area, which encompasses 662 square miles of Stanislaus, Merced, Tuolumne, and

Mariposa counties, and the Pacific Gas and Electric (PG&E) service area, which encompasses all or part of 47 counties in California, constituting most of the northern and central portions of the State.

Future development projects in the PG&E service area would be required to comply with Title 24 energy efficiency standards. At buildout, the proposed project would demand an estimated 211 million kWh of electricity on an annual basis and 785 million cubic yards of natural gas on an annual basis. TID provided a “will-serve” letter dated October 18, 2011 indicating that it has adequate supplies and transmission capacity to serve the proposed project. PG&E provided a “will-serve” letter dated October 19, 2011 indicating that it has adequate supplies and transmission capacity to serve the proposed project. The proposed project’s structures would be designed in accordance with Title 24, California’s Energy Efficiency Standards for Residential and Nonresidential Buildings. These standards include minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., HVAC and water heating systems), indoor and outdoor lighting, and illuminated signs. The incorporation of the Title 24 standards and other energy conservation measures into the project would ensure that the project would not result in the inefficient, unnecessary, or wasteful consumption of energy. Therefore, the proposed project, in conjunction with other future projects, would not have a cumulatively considerable impact on energy consumption.

4.2.13 - Transportation

The geographic scope of the cumulative transportation analysis is the roadway network shown in Exhibit 3.13-1, which largely consists of the western portion of the City of Patterson. All the new development projects listed in Table 4-1 would generate new vehicle trips that may trigger or contribute to unacceptable intersection operations. All projects would be required to mitigate for their fair share of impacts. At buildout, the proposed project would generate 11,755 trips during the weekday morning (AM) peak hour and 15,319 trips during the weekday (PM) afternoon peak hour. The proposed project would contribute trips to intersections that would operate at unacceptable levels during Existing Plus Phase I Conditions and to intersections and roadway segments that would operate at unacceptable levels during Cumulative 2035 Conditions. All feasible mitigation measures are proposed that would improve operations to acceptable levels. However, because there is uncertainty whether all necessary improvements would be fully funded and implemented as contemplated, the residual significance is significant and unavoidable. Therefore, the proposed project, in conjunction with other projects, would have a cumulatively considerable contribution to unacceptable intersection operations.

For other transportation-related areas, the proposed project would have significant impacts on alternative transportation. After the implementation of mitigation, these impacts would be reduced to a level of less than significant. Other projects that result in similar impacts would be required to mitigate for their impacts. Because the proposed project can mitigate all of its impacts to a level of less than significant, it would not have a related, cumulatively considerable impact.

SECTION 5: ALTERNATIVES TO THE PROPOSED PROJECT

5.1 - Introduction

In accordance with CEQA Guidelines Section 15126.6, this Environmental Impact Report (EIR) contains a comparative impact assessment of alternatives to the proposed project. The primary purpose of this section is to provide decision makers and the general public with a reasonable number of feasible project alternatives that could attain most of the basic project objectives, while avoiding or reducing any of the project's significant adverse environmental effects. Important considerations for these alternatives analyses are noted below (as stated in CEQA Guidelines Section 15126.6).

- An EIR need not consider every conceivable alternative to a project;
- An EIR should identify alternatives that were considered by the lead agency, but rejected as infeasible during the scoping process;
- Reasons for rejecting an alternative include:
 - Failure to meet most of the basic project objectives;
 - Infeasibility; or
 - Inability to avoid significant environmental effects.

5.1.1 - Significant Unavoidable Impacts

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

- **Conversion of Important Farmland:** Buildout of the proposed project would result in the conversion of Important Farmland to non-agricultural use. Mitigation is proposed requiring the applicant to permanently preserve farmland elsewhere in Stanislaus County. However, the preservation of farmland elsewhere would not fully offset the loss of Important Farmland; therefore, the residual significance of this impact is significant and unavoidable.
- **Air Quality Attainment Plan Consistency:** The proposed project would be inconsistent with the San Joaquin Valley Air Pollution Control District's regional air quality planning assumptions. Mitigation is proposed requiring the implementation of feasible emissions reduction measures; however, these measures would not reconcile this inconsistency. Therefore, the residual significance of this impact is significant and unavoidable.
- **Cumulatively Considerable Net Increase of Nonattainment Criteria Pollutants:** The project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors). Mitigation is proposed requiring the implementation of air emissions

reduction measures, but it would not fully reduce this impact to a level of less than significant. Therefore, the residual significance is significant and unavoidable.

- **Combined Transportation and Non-Transportation Noise:** The proposed project would generate vehicle trips that would contribute to unacceptable combined transportation and non-transportation noise levels. No feasible mitigation is available to fully mitigate this impact to a level of less than significant. As such, the residual significance of this impact is significant and unavoidable.
- **Existing Plus Phase I Traffic:** Phase I of the proposed project would generate vehicle trips that would contribute to unacceptable traffic operations under Existing Plus Phase I conditions. Mitigation is proposed that would require the applicant to contribute fees to fund necessary improvements; however, there is uncertainty regarding actual implementation of the improvements. As such, the residual significance of this impact is significant and unavoidable.
- **2035 Cumulative Traffic:** The proposed project would generate vehicle trips that would contribute to unacceptable traffic operations under 2035 Cumulative conditions. Mitigation is proposed that would require the applicant to contribute fees to fund necessary improvements; however, there is uncertainty regarding actual implementation of the improvements. As such, the residual significance of this impact is significant and unavoidable.

5.1.2 - Alternatives to the Proposed Project

The four alternatives to the proposed project analyzed in this section are as follows:

- **No Project Alternative:** The proposed project would not be developed and no changes would occur to the project site.
- **Arambel Business Park Alternative:** The Arambel Business Park component would be developed, which consists of approximately 12.18 million square feet of business park, general commercial, and light industrial uses on 776 net acres, and the KDN Retail Center/Business Park component would not be developed.
- **KDN Retail Center/Business Park Alternative:** The KDN Retail Center/Business Park component would be developed, which consists of approximately 1.28 million square feet of business park and general commercial uses on 104 net acres, and the Arambel Business Park component would not be developed.
- **Reduced Density Alternative:** A total of 10.10 million square feet of business park, general commercial, and light industrial uses would be developed on 661 net acres of the project site, which represents a 25-percent reduction in acreage and square footage.

The four alternatives to the proposed project are analyzed below. These analyses compare the proposed project and each individual project alternative. In several cases, the description of the impact may be the same under each alternative when compared with the CEQA Thresholds of Significance (i.e., both the project and the alternative would result in a less than significant impact). The actual degree of impact may be slightly different between the proposed project and each alternative, and this relative difference is the basis for a conclusion of greater or lesser impacts.

5.2 - Project Objectives

As stated in Section 2, Project Description, the objectives of the proposed project are to:

1. Create new jobs for local residents.
2. Contribute to economic growth through capital investment, the creation of new jobs, the establishment of new businesses, and the expansion of the tax base.
3. Facilitate the logical, orderly, and planned development of the project area through the use of a comprehensive planning document.
4. Promote economic development that is consistent with the long-term vision of the City of Patterson General Plan.
5. Prevent land use conflicts and discourage the premature conversion of agricultural land through the use of phasing, buffering, and other appropriate land planning techniques.
6. Provide new business park, general commercial, and light industrial uses that can be easily accessed from the existing and planned roadway network.
7. Minimize and mitigate truck travel impacts by siting the project in proximity to existing and future interchanges with Interstate 5 and the planned South County Expressway.
8. Develop new general commercial uses to cater to local residents and workers, as well as travelers on the Interstate 5 corridor.
9. Provide open space areas within the project area that serve multiple purposes such as storm drainage, recreation, and land use buffering.
10. Ensure that adequate potable water, sewer, storm drainage, roadways, and other supporting infrastructure is implemented in an efficient, logical, and timely manner to ensure that acceptable levels of public health, safety, and welfare are maintained.

5.3 - Alternative 1 – No Project Alternative

CEQA Guidelines Section 15126.6(e) requires that EIRs evaluate a “No Project Alternative,” which is the “circumstance under which the project does not proceed.” The CEQA Guidelines further

stipulate that the “discussion would compare the environmental effects of the property remaining in its current state against the environmental effects which would occur if the project is approved.”

Because the project site is currently in agricultural production—an economically viable land use activity—the No Project Alternative entails the continuation of these land use activities for the foreseeable future. As such, the project site would remain in unincorporated Stanislaus County and retain its current agricultural land use designations.

5.3.1 - Impact Analysis

The project site would remain in agricultural production for the foreseeable future. As such, this alternative would avoid all of the proposed project significant unavoidable impacts and potentially significant impacts that can be reduced to a level of less than significant after mitigation.

5.3.2 - Conclusion

The No Project Alternative would avoid the proposed project’s significant unavoidable impacts and have less impact on all environmental topical areas. However, this alternative would not advance any of the project objectives, including:

- Creating new jobs for local residents (Objective No. 1);
- Contributing to economic growth through capital investment, the creation of new jobs, the establishment of new businesses, and the expansion of the tax base (Objective No. 2);
- Promoting economic development that is consistent with the long-term vision of the City of Patterson General Plan (Objective No. 4);
- Providing new business park, general commercial, and light industrial uses that can be easily accessed from the existing and planned roadway network (Objective No. 6); and
- Developing new general commercial uses to cater to local residents and workers, as well as travelers on the Interstate 5 corridor (Objective No. 8).

5.4 - Alternative 2 – Arambel Business Park Alternative

The Arambel Business Park Alternative consists of the development of the Arambel Business Park component of the proposed project and the elimination of the KDN Retail Center/Business Park component.

As previously described in Section 2, Project Description, the Arambel Business Park component consists of 12,183,050 square feet of light industrial, business park, and general commercial uses on 776 net acres of the project site. End uses of the Arambel Business Park would consist of light industrial (11,037,850 square feet), business park (839,200 square feet), and general commercial (306,000 square feet). No specific tenants have been identified for any of the end uses.

The Arambel Business Park Alternative would require the following circulation improvements:

- **Rogers Road:** This roadway would be improved as contemplated by the project.
- **Zacharias Road (Future South County Expressway):** This roadway would be improved to its interim section as contemplated by the project.
- **Keystone Pacific Parkway Extension:** This roadway would be developed as contemplated by the project.
- **North-South Internal Roadway:** This new roadway would extend from the Keystone Pacific Parkway Extension northward to the project boundary, including the crossing of Del Puerto Creek. The portion between the Keystone Pacific Parkway Extension and Rogers Road would not be developed.
- **East-West Internal Roadway:** This new roadway would be developed as contemplated by the project.

In addition, a network of smaller streets would provide local access to the uses within the proposed project. The Emergency Vehicle Access would also be developed under this alternative.

This alternative would require the installation of all utility infrastructure required for the Arambel Business Park (refer to Exhibits 2-9a, 2-10a, 2-11a, and 2-12a), and none of the infrastructure required for the KDN Retail Center/Business Park.

The Arambel Business Park Alternative would require the following discretionary approvals: Annexation and Pre-Zone, General Plan Amendment, Master Development Plan Adoption, Planned Development, a Vesting Tentative Parcel Map, and a Development Agreement.

Table 5-1 summarizes the Arambel Business Park Alternative. The purpose of this alternative is to evaluate the Arambel component in isolation from the KDN component, which may lessen the severity of impacts associated with agriculture resources; air quality and greenhouse gases; biological resources; cultural resources; hydrology and water quality; noise; public services and utilities; and transportation.

Table 5-1: Arambel Business Park Alternative Summary

Scenario	End Use	Net Acres	Square Feet
Arambel Business Park Alternative	Light Industrial	652.46	11,037,850
	Business Park	87.70	839,200
	General Commercial	35.73	306,000
	<i>Total</i>	<i>775.89</i>	<i>12,183,050</i>

Table 5-1 (cont.): Arambel Business Park Alternative Summary

Scenario	End Use	Net Acres	Square Feet
Proposed Project	Light Industrial	652.46	11,037,850
	Business Park	105.31	1,036,900
	General Commercial	122.82	1,395,700
	<i>Total</i>	<i>880.59</i>	<i>13,470,600</i>
Difference	<i>Light Industrial</i>	<i>0</i>	<i>0</i>
	<i>Business Park</i>	<i>(17.61)</i>	<i>(197,700)</i>
	<i>General Commercial</i>	<i>(87.09)</i>	<i>(1,089,700)</i>
	<i>Total</i>	<i>(104.70)</i>	<i>(1,287,550)</i>
Source: Michael Brandman Associates, 2012.			

5.4.1 - Impact Analysis

Aesthetics, Light, and Glare

This alternative would result in the development of the Arambel Business Park uses as contemplated by the proposed project and the elimination of the KDN Retail Center/Business Park. The proposed project was found to have a less than significant impact on aesthetics, light, and glare, because the Master Development Plan sets forth design standards and guidelines that provide certainty that visual character will not be degraded and that new sources of light and glare would not adversely affect daytime or nighttime views. Because the Arambel Business Park Alternative would result in a reduction of 104 acres and 1.28 million square feet of development relative to the proposed project, it would further lessen the severity of light and glare impacts. Therefore, this alternative would have less impact on aesthetics, light, and glare than the proposed project.

Agricultural Resources

This alternative would result in the development of the Arambel Business Park as contemplated by the proposed project and the elimination of the KDN Retail Center/Business Park. The proposed project was found to have a significant impact on Important Farmland because it would convert as much as 880 net acres of farmland to non-agricultural use. Mitigation was proposed requiring preservation of Important Farmland elsewhere in Stanislaus County; however, this would not fully mitigate the impact to a level of less than significant. Accordingly, the residual significance is significant and unavoidable. In contrast, this alternative would convert as much as 776 net acres to non-agricultural use. Although this would not necessarily avoid a significant unavoidable impact, it would substantially lessen the severity of this impact. In addition, this alternative would implement mitigation similar to the proposed project for the cancellation of the two Williamson Act contracts, which would reduce impacts to a level of less than significant. Therefore, this alternative would have less impact on agricultural resources than the proposed project.

Air Quality and Greenhouse Gas Emissions

This alternative would result in the development of the Arambel Business Park as contemplated by the proposed project and the elimination of the KDN Retail Center/Business Park. The proposed project was found to have significant impacts associated with air quality attainment plan consistency and cumulatively considerable net increase of nonattainment criteria pollutants. Mitigation was proposed requiring the implementation of feasible emissions reduction features; however, this would not fully mitigate these impacts to a level of less than significant. Accordingly, the residual significance for these issues is significant and unavoidable. Although this alternative would not necessarily avoid these significant unavoidable impacts, it would substantially lessen the severity of all of them by reducing disturbed acreage and building square footage, which would yield reductions in overall emissions. Therefore, this alternative would have fewer impacts on air quality than the proposed project.

Biological Resources

This alternative would result in the development of the Arambel Business Park as contemplated by the proposed project and the elimination of the KDN Retail Center/Business Park. The proposed project was found to have significant impacts on special-status species, riparian habitat, wetlands, and wildlife movement. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb 104 fewer acres, it would lessen the severity of its impacts. Therefore, this alternative would have less impact on biological resources than the proposed project.

Cultural Resources

This alternative would result in the development of the Arambel Business Park as contemplated by the proposed project and the elimination of the KDN Retail Center/Business Park. The proposed project found to have significant impacts on historical resources, archaeological resources, paleontological resources, and burial sites. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb 104 fewer acres, it would lessen the severity of its impacts. Therefore, this alternative would have less impact on cultural resources than the proposed project.

Geology, Soils, and Seismicity

This alternative would result in the development of the Arambel Business Park as contemplated by the proposed project and the elimination of the KDN Retail Center/Business Park. The proposed project was found to have significant impacts on seismic hazards, erosion, and unstable geologic units and soils. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage and develop less square footage than the proposed project, it would lessen the severity of its impacts. Therefore, this alternative would have less impact on geology, soils, and seismicity than the proposed project.

Hazards and Hazardous Materials

This alternative would result in the development of the Arambel Business Park as contemplated by the proposed project and the elimination of the KDN Retail Center/Business Park. The proposed project was found to have significant impacts associated with hazardous materials from past or present site usage as well as the potential for risk of upset. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage and develop less square footage than the proposed project, it would lessen the severity of its impacts. Therefore, this alternative would have less impact on hazards and hazardous materials than the proposed project.

Hydrology and Water Quality

This alternative would result in the development of the Arambel Business Park as contemplated by the proposed project and the elimination of the KDN Retail Center/Business Park. The proposed project was found to have significant impacts on short-term water quality, long-term water quality, and drainage, drainage, and other water quality considerations. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage and develop less square footage than the proposed project, it would lessen the severity of its impacts. Therefore, this alternative would have less impact on hydrology and water quality than the proposed project.

Land Use

This alternative would result in the development of the Arambel Business Park as contemplated by the proposed project and the elimination of the KDN Retail Center/Business Park. This alternative would require the following discretionary approvals: Annexation and Pre-Zone, General Plan Amendment, Master Development Plan Adoption, Planned Development, a Vesting Tentative Parcel Map, and a Development Agreement. As with the proposed project, this alternative would be consistent with City of Patterson General Plan, the Patterson Municipal Code, and the Stanislaus County Airport Land Use Commission Plan.

The proposed project was found to be consistent with Stanislaus Local Agency Formation Commission (LAFCO) annexation criteria, in part, because the annexation of the entire project site would avoid the creation of unusual jurisdictional boundaries and “unincorporated islands,” which are conditions discouraged by LAFCO. This alternative would only involve the annexation of the Arambel Business Park into the City of Patterson and would leave KDN site in the unincorporated County. This would effectively create an “unincorporated island,” as the KDN site would be surrounded on three sides by the City of Patterson. As such, the Arambel Business Park Alternative may not achieve the same degree of consistency with LAFCO annexation criteria as the proposed project. As such, the severity of this alternative’s land use impacts would be greater. Therefore, this alternative would have greater impacts on land use than the proposed project.

Noise

This alternative would result in the development of the Arambel Business Park as contemplated by the proposed project and the elimination of the KDN Retail Center/Business Park. The proposed project was found to have significant impacts associated with combined transportation and non-transportation noise. No feasible mitigation is available to reduce this impact to a level of less than significant and, therefore, the residual significance is significant and unavoidable. However, because this alternative would develop less square footage than the proposed project, it would lessen the severity of this impact by generating fewer trips, although it would not necessarily avoid the significant unavoidable finding. Therefore, this alternative would have less impact on noise than the proposed project.

Population and Housing

This alternative would result in the development of the Arambel Business Park as contemplated by the proposed project and the elimination of the KDN Retail Center/Business Park. The proposed project is expected to create as many as 10,093 employment opportunities over a period of 20 years. These new employment opportunities would not be considered growth inducing, as there is ample available labor to fill new jobs created in the near term and forecasted population growth is expected to fill new jobs created in the long term. The Arambel Business Park is expected to create fewer new employment opportunities than the proposed project, and, thus, to lessen the severity of its impacts. Therefore, this alternative would have less impact on population and housing than the proposed project.

Public Services and Utilities

This alternative would result in the development of the Arambel Business Park as contemplated by the proposed project and the elimination of the KDN Retail Center/Business Park. This alternative would increase demands for public services and utilities and would implement mitigation similar to the proposed project for impacts on fire protection, police protection, water supply, wastewater, storm drainage, and solid waste. Because this alternative would develop less square footage than the proposed project, it would reduce demands on public service and utility providers and would lessen the severity of its impacts.

Transportation

This alternative would result in the development of the Arambel Business Park as contemplated by the proposed project and the elimination of the KDN Retail Center/Business Park. Table 5-2 compares the Arambel Business Park Alternative's peak-hour trip generation to the proposed project's peak-hour trip generation. As shown in the table, this alternative would generate 5,900 fewer AM peak-hour trips and 3,246 fewer PM peak-hour trips than the proposed project. Although the reduction in peak-hour trip generation would not be enough to reduce the significant unavoidable finding for traffic impacts, it would substantially lessen the severity of these impacts.

Table 5-2: Arambel Business Park Alternative Trip Generation Summary

Scenario	Use	AM Peak Hour		PM Peak Hour	
		Rate	Trips	Rate	Trips
Arambel Business Park Alternative	Light Industrial - 11,037,850 square feet	0.46 trip/1,000 square feet	5,077	0.96 trip/1,000 square feet	10,596
	Business Park - 839,200 square feet	0.50 trip/1,000 square feet	420	0.79 trip/1,000 square feet	663
	General Commercial - 306,000 square feet	1.17 trips/1,000 square feet	358	2.66 trips/1,000 square feet	814
	<i>Total</i>	—	5,855	—	12,073
Proposed Project	Total	—	11,755	—	15,319
Difference	Total	—	(5,900)	—	(3,246)
Notes: Institute of Transportation Engineers (ITE), 8 th Edition used for trip generation rates. The following rates were used for each use: Light Industrial: ITE Code 110 (Light Industrial) Business Park: ITE Code 130 (Industrial Business Park) General Commercial: ITE Code 820 (Shopping Center) Source: Michael Brandman Associates, 2012.					

Similar to the proposed project, this alternative would mitigate for impacts on alternative transportation, which would reduce impacts to a level of less than significant. Additionally, as with the proposed project, this alternative would not result in significant impacts on other transportation-related areas.

In summary, the Arambel Business Park Alternative would substantially reduce trip generation relative to the proposed project, thereby lessening its contribution to significant unavoidable traffic impacts. Therefore, this alternative would have fewer impacts on transportation than the proposed project.

5.4.2 - Conclusion

The Arambel Business Park Alternative would result in significant unavoidable findings similar to those of the project for agricultural resources, air quality and greenhouse gas emissions, noise, and transportation impacts; however, it would substantially lessen the severity of each impact. This alternative would also lessen the severity of all other impacts, with the exception of land use, where it would have a greater impact.

The Arambel Business Park Alternative would not advance most of the project objectives to the same degree as the proposed project. For example, the 1.28-million-square-foot reduction in development would yield fewer jobs relative to the proposed project, thereby not fully advancing the project objectives that concern creating new jobs for local residents (Objective No. 1) and contributing to economic growth through capital investment, the creation of new jobs, the establishment of new

businesses, and the expansion of the tax base (Objective No. 2). Additionally, this alternative would only partially further the project objectives that concern promoting economic development that is consistent with the long-term vision of the City of Patterson General Plan (Objective No. 4); providing new business park, general commercial, and light industrial uses that can be easily accessed from the existing and planned roadway network (Objective No. 6); and developing new general commercial uses to cater to local residents and workers, as well as travelers on the I-5 corridor (Objective No. 8) relative to the proposed project. Finally, this alternative would not advance the objective concern prevention of land use conflicts and discouragement of premature conversion of agricultural land through the use of phasing, buffering, and other appropriate land planning techniques (Objective No. 5), as the exclusion of the KDN acreage is contrary to this goal.

5.5 - Alternative 3 – KDN Retail Center/Business Park Alternative

The KDN Retail Center/Business Park Alternative consists of the development of the KDN Retail Center/Business Park component of the proposed project and the elimination of the Arambel Business Park component.

As previously described in Section 2, Project Description, the KDN Retail Center/Business Park component consists of 1,287,400 square feet of light industrial, business park, and general commercial uses on 104.7 net acres of the project site immediately adjacent to the existing Villa del Lago highway commercial center. End uses of the KDN Retail Center/Business Park would consist of general commercial (1,089,700 square feet) and business park (197,700 square feet). No specific tenants have been identified for any of the end uses.

The KDN Retail Center/Business Park Alternative would require the following circulation improvements:

- **Rogers Road:** This roadway would be improved as contemplated by the project up to the Delta-Mendota Canal. The only improvements that would be made north of the canal are those associated with the intersection of Rogers Road/Keystone Pacific Parkway Extension.
- **Keystone Pacific Parkway Extension:** This roadway would be developed as contemplated by the project.
- **North-South Internal Roadway:** This new roadway would extend from Rogers Road to the Keystone Pacific Parkway Extension. The portion north of Keystone Pacific Parkway Extension would not be developed.

In addition, a network of smaller streets would provide local access to the uses within the proposed project. The Emergency Vehicle Access would not be developed under this alternative, since the portion of the project site between the California Aqueduct and I-5 is not within the KDN component.

This alternative would require the installation of all utility infrastructure required for the KDN Retail Center/Business Park (refer to Exhibits 2-9b, 2-9b, 2-11b, and 2-12b), and none of the infrastructure required for the Arambel Business Park.

The KDN Retail Center/Business Park Alternative would require the following discretionary approvals: Annexation and Pre-Zone, General Plan Amendment, Master Development Plan Adoption, Planned Development, a Vesting Tentative Parcel Map, and a Development Agreement.

Table 5-3 summarizes the KDN Retail Center/Business Park Alternative. The purpose of this alternative is to evaluate the KDN component in isolation from the Arambel component, which may lessen the severity of impacts associated with agriculture resources; air quality and greenhouse gases; biological resources; cultural resources; hydrology and water quality; noise; public services and utilities; and transportation.

Table 5-3: KDN Retail Center/Business Park Alternative Summary

Scenario	End Use	Net Acres	Square Feet
KDN Retail Center/Business Park Alternative	Business Park	17.61	197,700
	General Commercial	87.09	1,089,700
	<i>Total</i>	<i>104.70</i>	<i>1,287,400</i>
Proposed Project	Light Industrial	652.46	11,037,850
	Business Park	105.31	1,036,900
	General Commercial	122.82	1,395,700
	<i>Total</i>	<i>880.59</i>	<i>13,470,600</i>
Difference	<i>Light Industrial</i>	<i>(652.46)</i>	<i>(11,037,850)</i>
	<i>Business Park</i>	<i>(87.70)</i>	<i>(839,200)</i>
	<i>General Commercial</i>	<i>(35.73)</i>	<i>(306,000)</i>
	<i>Total</i>	<i>(775.89)</i>	<i>(12,183,050)</i>
Source: Michael Brandman Associates, 2012.			

5.5.1 - Impact Analysis

Aesthetics, Light, and Glare

This alternative would result in the development of the KDN Retail Center/Business Park uses as contemplated by the proposed project and the elimination of the Arambel Business Park. The proposed project was found to have a less than significant impact on aesthetics, light, and glare, because the Master Development Plan sets forth design standards and guidelines that provide certainty that visual character will not be degraded and that new sources of light and glare would not adversely affect daytime or nighttime views. Because the KDN Retail Center/Business Park Alternative would result in a reduction of 776 acres and 12.18 million square feet of development

relative to the proposed project, it would further lessen the severity of light and glare impacts. Therefore, this alternative would have less impact on aesthetics, light, and glare than the proposed project.

Agricultural Resources

This alternative would result in the development of the KDN Retail Center/Business Park uses as contemplated by the proposed project and the elimination of the Arambel Business Park. The proposed project was found to have a significant impact on Important Farmland because it would convert as much as 880 net acres of farmland to non-agricultural use. Mitigation was proposed requiring preservation of Important Farmland elsewhere in Stanislaus County; however, this would not fully mitigate the impact to a level of less than significant. Accordingly, the residual significance is significant and unavoidable. In contrast, this alternative would convert as much as 104 net acres to non-agricultural use. Although this would not necessarily avoid a significant unavoidable impact, it would substantially lessen the severity of this impact. In addition, this alternative would avoid the need to cancel the two Williamson Act contracts, as they are outside the KDN component boundaries. Therefore, this alternative would have less impact on agricultural resources than the proposed project.

Air Quality and Greenhouse Gas Emissions

This alternative would result in the development of the KDN Retail Center/Business Park uses as contemplated by the proposed project and the elimination of the Arambel Business Park. The proposed project was found to have significant impacts associated with air quality attainment plan consistency and cumulatively considerable net increase of nonattainment criteria pollutants. Mitigation was proposed requiring the implementation of feasible emissions reduction features; however, this would not fully mitigate these impacts to a level of less than significant. Accordingly, the residual significance for these issues is significant and unavoidable. Although this alternative would not necessarily avoid these significant unavoidable impacts, it would substantially lessen the severity of all of them by reducing disturbed acreage and building square footage, which would yield reductions in overall emissions. Therefore, this alternative would have fewer impacts on air quality than the proposed project.

Biological Resources

This alternative would result in the development of the KDN Retail Center/Business Park uses as contemplated by the proposed project and the elimination of the Arambel Business Park. The proposed project was found to have significant impacts on special-status species, riparian habitat, wetlands, and wildlife movement. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb 776 fewer acres (including Del Puerto Creek), it would avoid the riparian habitat, wetlands, and wildlife movement impacts of the proposed project and lessen the severity of the special-status species impacts. Therefore, this alternative would have less impact on biological resources than the proposed project.

Cultural Resources

This alternative would result in the development of the KDN Retail Center/Business Park uses as contemplated by the proposed project and the elimination of the Arambel Business Park. The proposed project found to have significant impacts on historical resources, archaeological resources, paleontological resources, and burial sites. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb 776 fewer acres, it would lessen the severity of its impacts. Therefore, this alternative would have less impact on cultural resources than the proposed project.

Geology, Soils, and Seismicity

This alternative would result in the development of the KDN Retail Center/Business Park uses as contemplated by the proposed project and the elimination of the Arambel Business Park. The proposed project was found to have significant impacts on seismic hazards, erosion, and unstable geologic units and soils. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage and develop less square footage than the proposed project, it would lessen the severity of its impacts. Therefore, this alternative would have fewer impacts on geology, soils, and seismicity than the proposed project.

Hazards and Hazardous Materials

This alternative would result in the development of the KDN Retail Center/Business Park uses as contemplated by the proposed project and the elimination of the Arambel Business Park. The proposed project was found to have significant impacts associated with hazardous materials from past or present site usage as well as the potential for risk of upset. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage and develop less square footage than the proposed project, it would lessen the severity of its impacts. Therefore, this alternative would have fewer impacts on hazards and hazardous materials than the proposed project.

Hydrology and Water Quality

This alternative would result in the development of the KDN Retail Center/Business Park uses as contemplated by the proposed project and the elimination of the Arambel Business Park. The proposed project was found to have significant impacts on short-term water quality, long-term water quality, drainage, and other water quality considerations. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage and develop less square footage than the proposed project, it would lessen the severity of its impacts. Therefore, this alternative would have fewer impacts on hydrology and water quality than the proposed project.

Land Use

This alternative would result in the development of the KDN Retail Center/Business Park uses as contemplated by the proposed project and the elimination of the Arambel Business Park. This alternative would require the following discretionary approvals: Annexation and Pre-Zone, General Plan Amendment, Master Development Plan Adoption, Planned Development, a Vesting Tentative Parcel Map, and a Development Agreement. As with the proposed project, this alternative would be consistent with City of Patterson General Plan, the Patterson Municipal Code, and the Stanislaus County Airport Land Use Commission Plan.

The proposed project was found to be consistent with LAFCO annexation criteria, in part, because the annexation of the entire project site would avoid the creation of unusual jurisdictional boundaries and “unincorporated islands,” which are conditions discouraged by LAFCO. This alternative would only involve the annexation of the KDN Retail Center/Business Park into the City of Patterson and would leave the Arambel site in the unincorporated County. However, the KDN site is contiguous to the existing Patterson city limits on two sides (Villa Del Lago and West Patterson Business Park) and, therefore, is consistent with LAFCO annexation criteria. Therefore, this alternative’s impacts on land use would be similar to the proposed project.

Noise

This alternative would result in the development of the KDN Retail Center/Business Park uses as contemplated by the proposed project and the elimination of the Arambel Business Park. The proposed project was found to have significant impacts associated with combined transportation and non-transportation noise. No feasible mitigation is available to reduce this impact to a level of less than significant and, therefore, the residual significance is significant and unavoidable. However, because this alternative would develop less square footage than the proposed project, it would lessen the severity of this impact by generating fewer trips, although it would not necessarily avoid the significant unavoidable finding. Therefore, this alternative would have fewer noise impacts than the proposed project.

Population and Housing

This alternative would result in the development of the KDN Retail Center/Business Park uses as contemplated by the proposed project and the elimination of the Arambel Business Park. The proposed project is expected to create as many as 10,093 employment opportunities over a period of 20 years. These new employment opportunities would not be considered growth inducing, as there is ample available labor to fill new jobs created in the near term and forecasted population growth is expected to fill new jobs created in the long term. The KDN Retail Center/Business Park Alternative is expected to create fewer new employment opportunities than the proposed project, and, thus, to lessen the severity of its impacts. Therefore, this alternative would have less impact on population and housing than the proposed project.

Public Services and Utilities

This alternative would result in the development of the KDN Retail Center/Business Park uses as contemplated by the proposed project and the elimination of the Arambel Business Park. This alternative would increase demands for public services and utilities and would implement mitigation similar to the proposed project for impacts on fire protection, police protection, water supply, wastewater, storm drainage, and solid waste. Because this alternative would develop less square footage than the proposed project, it would reduce demands on public service and utility providers and would lessen the severity of its impacts.

Transportation

This alternative would result in the development of the KDN Retail Center/Business Park uses as contemplated by the proposed project and the elimination of the Arambel Business Park. Table 5-4 compares the KDN Retail Center/Business Park Alternative's peak-hour trip generation to the proposed project's peak-hour trip generation. As shown in the table, this alternative would generate 10,975 fewer AM peak-hour trips and 13,932 fewer PM peak-hour trips than the proposed project. Although the reduction in peak-hour trip generation would not be enough to reduce the significant unavoidable finding for traffic impacts, it would substantially lessen the severity of these impacts.

Table 5-4: KDN Retail Center/Business Park Alternative Trip Generation Summary

Scenario	Use	AM Peak Hour		PM Peak Hour	
		Rate	Trips	Rate	Trips
KDN Retail Center/Business Park Alternative	Business Park - 1,089,700 square feet	0.50 trip/1,000 square feet	549	0.79 trip/1,000 square feet	861
	General Commercial - 197,700 square feet	1.17 trips/1,000 square feet	231	2.66 trips/1,000 square feet	526
	<i>Total</i>	—	<i>780</i>	—	<i>1,387</i>
Proposed Project	Total	—	11,755	—	15,319
Difference	Total	—	(10,975)	—	(13,932)
Notes: Institute of Transportation Engineers (ITE), 8 th Edition used for trip generation rates. The following rates were used for each use: Light Industrial: ITE Code 110 (Light Industrial) Business Park: ITE Code 130 (Industrial Business Park) General Commercial: ITE Code 820 (Shopping Center) Source: Michael Brandman Associates, 2012.					

Similar to the proposed project, this alternative would mitigate for impacts on alternative transportation, which would reduce impacts to a level of less than significant. Additionally, as with the proposed project, this alternative would not result in significant impacts on other transportation-related areas.

In summary, the KDN Retail Center/Business Park Alternative would substantially reduce trip generation relative to the proposed project, thereby lessening its contribution to significant unavoidable traffic impacts. Therefore, this alternative would have fewer impacts on transportation than the proposed project.

5.5.2 - Conclusion

The KDN Retail Center/Business Park Alternative would result in significant unavoidable findings similar to the project for agricultural resources, air quality and greenhouse gas emissions, noise, and transportation impacts; however, it would substantially lessen the severity of each impact. This alternative would also lessen the severity of all other impacts.

The KDN Retail Center/Business Park Alternative would not advance most of the project objectives to the same degree as the proposed project. For example, the 12.18 million square-foot reduction in development would yield fewer jobs relative to the proposed project, thereby not fully advancing the project objectives that concern creating new jobs for local residents (Objective No. 1) and contributing to economic growth through capital investment, the creation of new jobs, the establishment of new businesses, and the expansion of the tax base (Objective No. 2). Additionally, this alternative would only partially further the project objectives that concern promoting economic development that is consistent with the long-term vision of the City of Patterson General Plan (Objective No. 4); providing new business park, general commercial, and light industrial uses that can be easily accessed from the existing and planned roadway network (Objective No. 6); and developing new general commercial uses to cater to local residents and workers, as well as travelers on the Interstate 5 corridor (Objective No. 8) relative to the proposed project.

5.6 - Alternative 4 – Reduced Density Alternative

The Reduced Density Alternative consists of the development of 8.81 million square feet of light industrial, business park, and general commercial uses on 712 gross acres of the project site. This alternative represents a 25-percent reduction in both square footage and acreage relative to the proposed project.

The 25-percent reduction in square footage would be applied proportionately to the project uses. The 25-percent reduction in acreage would result in the 73 gross acres between California Aqueduct and I-5 and 165 gross acres of the northern portion of the project site along Zacharias Road remaining in agricultural production for the foreseeable future. This reduction in acreage would eliminate the need for the new crossings of the California Aqueduct and Del Puerto Creek.

The Reduced Density Alternative would require the following circulation improvements:

- **Rogers Road:** This roadway would be improved as contemplated by the project to northern boundary of the proposed project. The improvements would not extend all the way to Zacharias Road.
- **Keystone Pacific Parkway Extension:** This roadway would be developed as contemplated by the project.
- **North-South Internal Roadway:** This new roadway would extend from Rogers Road to a point south of Del Puerto Creek, where it would terminate. No crossing of the creek would occur.
- **East-West Internal Roadway.** This new roadway would be developed as contemplated by the project.

In addition, a network of smaller streets would provide local access to the uses within the proposed project. The Emergency Vehicle Access would not be developed under this alternative since the portion of the project site between the California Aqueduct and I-5 is not within this alternative.

This alternative would require the installation of all utility infrastructure required for the KDN Retail Center/Business Park (refer to Exhibits 2-9b, 2-10b, 2-11b, and 2-12b), and a portion of the infrastructure required for the Arambel Business Park (refer to Exhibits 2-9a, 2-10a, 2-11a, and 2-12a).

The Reduced Density Alternative would require the following discretionary approvals: Annexation and Pre-Zone, General Plan Amendment, Master Development Plan Adoption, Planned Development, Vesting Tentative Parcel Maps, and Development Agreements.

Table 5-5 summarizes the Reduced Density Alternative. The purpose of this alternative is to reduce the footprint and development potential of the proposed project, which may lessen the severity of impacts associated with agriculture resources; air quality and greenhouse gases; biological resources; cultural resources; hydrology and water quality; noise; public services and utilities; and transportation.

Table 5-5: Reduced Density Alternative Summary

Scenario	End Use	Net Acres	Square Feet
Reduced Density Alternative	Light Industrial	489.50	8,278,400
	Business Park	79.00	777,600
	General Commercial	92.00	1,046,800
	<i>Total</i>	<i>660.50</i>	<i>10,102,800</i>

Table 5-5 (cont.): Reduced Density Alternative Summary

Scenario	End Use	Net Acres	Square Feet
Proposed Project	Light Industrial	652.46	11,037,850
	Business Park	105.31	1,036,900
	General Commercial	122.82	1,395,700
	<i>Total</i>	<i>880.59</i>	<i>13,470,600</i>
<i>Difference</i>	<i>Light Industrial</i>	<i>(162.96)</i>	<i>(2,759,450)</i>
	<i>Business Park</i>	<i>(26.31)</i>	<i>(259,300)</i>
	<i>General Commercial</i>	<i>(30.82)</i>	<i>(348,900)</i>
	<i>Total</i>	<i>(220.09)</i>	<i>(3,367,800)</i>
Source: Michael Brandman Associates, 2012.			

5.6.1 - Impact Analysis

Aesthetics, Light, and Glare

This alternative would result in the development of 10.10 million square feet of business park, general commercial, and light industrial uses on 661 net acres of the project site, which represents a 25-percent reduction in acreage and development relative to the proposed project. The proposed project was found to have a less than significant impact on aesthetics, light, and glare, because the Master Development Plan sets forth design standards and guidelines that provide certainty that visual character will not be degraded and that new sources of light and glare would not adversely affect daytime or nighttime views. Because the Reduced Density Alternative would result in a reduction of 220 acres and 3.37 million square feet of development relative to the proposed project, it would further lessen the severity of light and glare impacts. Therefore, this alternative would have less impact on aesthetics, light, and glare than the proposed project.

Agricultural Resources

This alternative would result in the development of 10.10 million square feet of business park, general commercial, and light industrial uses on 661 net acres of the project site, which represents a 25-percent reduction in acreage and development relative to the proposed project. The proposed project was found to have a significant impact on Important Farmland because it would convert as much as 880 net acres of farmland to non-agricultural use. Mitigation was proposed requiring preservation of Important Farmland elsewhere in Stanislaus County; however, this would not fully mitigate the impact to a level of less than significant. Accordingly, the residual significance is significant and unavoidable. In contrast, this alternative would convert as much as 661 net acres to non-agricultural use. Although this would not necessarily avoid a significant unavoidable impact, it would substantially lessen the severity of this impact. In addition, this alternative would implement mitigation similar to the proposed project for the cancellation of the two Williamson Act contracts,

which would reduce impacts to a level of less than significant. Therefore, this alternative would have less impact on agricultural resources than the proposed project.

Air Quality and Greenhouse Gas Emissions

This alternative would result in the development of 10.10 million square feet of business park, general commercial, and light industrial uses on 661 net acres of the project site, which represents a 25-percent reduction in acreage and development relative to the proposed project. The proposed project was found to have significant impacts associated with air quality attainment plan consistency and cumulatively considerable net increase of nonattainment criteria pollutants. Mitigation was proposed requiring the implementation of feasible emissions reduction features; however, this would not fully mitigate these impacts to a level of less than significant. Accordingly, the residual significance for these issues is significant and unavoidable. Although this alternative would not necessarily avoid these significant unavoidable impacts, it would substantially lessen the severity of all of them by reducing disturbed acreage and building square footage, which would yield reductions in overall emissions. Therefore, this alternative would have fewer impacts on air quality than the proposed project.

Biological Resources

This alternative would result in the development of 10.10 million square feet of business park, general commercial, and light industrial uses on 661 net acres of the project site, which represents a 25-percent reduction in acreage and development relative to the proposed project. The proposed project was found to have significant impacts on special-status species, riparian habitat, wetlands, and wildlife movement. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb 220 fewer acres (including Del Puerto Creek), it would avoid the riparian habitat, wetlands, and wildlife movement impacts of the proposed project and lessen the severity of the special-status species impacts. Therefore, this alternative would have less impact on biological resources than the proposed project.

Cultural Resources

This alternative would result in the development of 10.10 million square feet of business park, general commercial, and light industrial uses on 661 net acres of the project site, which represents a 25-percent reduction in acreage and development relative to the proposed project. The proposed project found to have significant impacts on historical resources, archaeological resources, paleontological resources, and burial sites. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb 220 fewer acres, it would lessen the severity of its impacts. Therefore, this alternative would have less impact on cultural resources than the proposed project.

Geology, Soils, and Seismicity

This alternative would result in the development of 10.10 million square feet of business park, general commercial, and light industrial uses on 661 net acres of the project site, which represents a 25-percent reduction in acreage and development relative to the proposed project. The proposed project was found to have significant impacts on seismic hazards, erosion, and unstable geologic units and soils. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage and develop less square footage than the proposed project, it would lessen the severity of its impacts. Therefore, this alternative would have fewer impacts on geology, soils, and seismicity than the proposed project.

Hazards and Hazardous Materials

This alternative would result in the development of 10.10 million square feet of business park, general commercial, and light industrial uses on 661 net acres of the project site, which represents a 25-percent reduction in acreage and development relative to the proposed project. The proposed project was found to have significant impacts associated with hazardous materials from past or present site usage as well as the potential for risk of upset. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage and develop less square footage than the proposed project, it would lessen the severity of its impacts. Therefore, this alternative would have fewer impacts on hazards and hazardous materials than the proposed project.

Hydrology and Water Quality

This alternative would result in the development of 10.10 million square feet of business park, general commercial, and light industrial uses on 661 net acres of the project site, which represents a 25-percent reduction in acreage and development relative to the proposed project. The proposed project was found to have significant impacts on short-term water quality, long-term water quality, and drainage, drainage, and other water quality considerations. Mitigation was proposed to address all of these impacts and would fully mitigate these issues to a level of less than significant. Because this alternative would disturb less acreage and develop less square footage than the proposed project, it would lessen the severity of its impacts. Therefore, this alternative would have fewer impacts on hydrology and water quality than the proposed project.

Land Use

This alternative would result in the development of 10.10 million square feet of business park, general commercial, and light industrial uses on 661 net acres of the project site, which represents a 25-percent reduction in acreage and development relative to the proposed project. This alternative would require the following discretionary approvals: Annexation and Pre-Zone, General Plan Amendment, Master Development Plan Adoption, Planned Development, Vesting Tentative Parcel Maps, and Development Agreements. As with the proposed project, this alternative would be consistent with

City of Patterson General Plan, the Patterson Municipal Code, and the Stanislaus County Airport Land Use Commission Plan.

The proposed project was found to be consistent with LAFCO annexation criteria, in part, because the annexation of the entire project site would avoid the creation of unusual jurisdictional boundaries and “unincorporated islands,” which are conditions discouraged by LAFCO. This alternative would involve the annexation of 661 net acres contiguous to the existing Patterson city limits on two sides (Villa Del Lago and West Patterson Business Park) and, therefore, is consistent with LAFCO annexation criteria. Therefore, this alternative’s impacts on land use would be similar to the proposed project.

Noise

This alternative would result in the development of 10.10 million square feet of business park, general commercial, and light industrial uses on 661 net acres of the project site, which represents a 25-percent reduction in acreage and development relative to the proposed project. The proposed project was found to have significant impacts associated with combined transportation and non-transportation noise. No feasible mitigation is available to reduce this impact to a level of less than significant and, therefore, the residual significance is significant and unavoidable. However, because this alternative would develop less square footage than the proposed project, it would lessen the severity of this impact by generating fewer trips, although it would not necessarily avoid the significant unavoidable finding. Therefore, this alternative would have fewer noise impacts than the proposed project.

Population and Housing

This alternative would result in the development of 10.10 million square feet of business park, general commercial, and light industrial uses on 661 net acres of the project site, which represents a 25-percent reduction in acreage and development relative to the proposed project. The proposed project is expected to create as many as 10,093 employment opportunities over a period of 20 years. These new employment opportunities would not be considered growth inducing, as there is ample available labor to fill new jobs created in the near term and forecasted population growth is expected to fill new jobs created in the long term. The Reduced Density Alternative is expected to create fewer new employment opportunities than the proposed project, and, thus, to lessen the severity of its impacts. Therefore, this alternative would have less impact on population and housing than the proposed project.

Public Services and Utilities

This alternative would result in the development of 10.10 million square feet of business park, general commercial, and light industrial uses on 661 net acres of the project site, which represents a 25-percent reduction in acreage and development relative to the proposed project. This alternative would increase demands for public services and utilities and would implement mitigation similar to the proposed project for impacts on fire protection, police protection, water supply, wastewater, storm

drainage, and solid waste. Because this alternative would develop less square footage than the proposed project, it would reduce demands on public service and utility providers and would lessen the severity of its impacts.

Transportation

This alternative would result in the development of 10.10 million square feet of business park, general commercial, and light industrial uses on 661 net acres of the project site, which represents a 25-percent reduction in acreage and development relative to the proposed project. Table 5-6 compares the Reduced Density Alternative's peak-hour trip generation to the proposed project's peak-hour trip generation. As shown in the table, this alternative would generate 6,333 fewer AM peak-hour trips and 3,974 fewer PM peak-hour trips than the proposed project. Although the reduction in peak-hour trip generation would not be enough to reduce the significant unavoidable finding for traffic impacts, it would substantially lessen the severity of these impacts.

Table 5-6: Reduced Density Alternative Trip Generation Summary

Scenario	Use	AM Peak Hour		PM Peak Hour	
		Rate	Trips	Rate	Trips
Reduced Density Alternative	Light Industrial - 8,278,400 square feet	0.46 trip/1,000 square feet	3,808	0.96 trip/1,000 square feet	7,947
	Business Park - 777,600 square feet	0.50 trip/1,000 square feet	389	0.79 trip/1,000 square feet	614
	General Commercial - 1,046,800 square feet	1.17 trips/1,000 square feet	1,225	2.66 trips/1,000 square feet	2,784
	<i>Total</i>	—	5,422	—	11,345
Proposed Project	Total	—	11,755	—	15,319
Difference	Total	—	(6,333)	—	(3,974)
Notes: Institute of Transportation Engineers (ITE), 8 th Edition used for trip generation rates. The following rates were used for each use: Light Industrial: ITE Code 110 (Light Industrial) Business Park: ITE Code 130 (Industrial Business Park) General Commercial: ITE Code 820 (Shopping Center) Source: Michael Brandman Associates, 2012.					

Similar to the proposed project, this alternative would mitigate for impacts on alternative transportation, which would reduce impacts to a level of less than significant. Additionally, as with the proposed project, this alternative would not result in significant impacts on other transportation-related areas.

In summary, the Reduced Density Alternative would substantially reduce trip generation relative to the proposed project, thereby lessening its contribution to significant unavoidable traffic impacts. Therefore, this alternative would have fewer impacts on transportation than the proposed project.

5.6.2 - Conclusion

The Reduced Density Alternative would result in significant unavoidable findings similar to the project for agricultural resources, air quality and greenhouse gas emissions, noise, and transportation impacts; however, it would substantially lessen the severity of each impact. This alternative would also lessen the severity of all other impacts.

The Reduced Density Alternative would not advance most of the project objectives to the same degree as the proposed project. For example, the 3.37 million square-foot reduction in development would yield fewer jobs relative to the proposed project, thereby not fully advancing the project objectives that concern creating new jobs for local residents (Objective No. 1) and contributing to economic growth through capital investment, the creation of new jobs, the establishment of new businesses, and the expansion of the tax base (Objective No. 2). Additionally, this alternative would only partially further the project objectives that concern promoting economic development that is consistent with the long-term vision of the City of Patterson General Plan (Objective No. 4); providing new business park, general commercial, and light industrial uses that can be easily accessed from the existing and planned roadway network (Objective No. 6); and developing new general commercial uses to cater to local residents and workers, as well as travelers on the Interstate 5 corridor (Objective No. 8) relative to the proposed project.

5.7 - Environmentally Superior Alternative

The qualitative environmental effects of each alternative in relation to the proposed project are summarized in Table 5-7.

Table 5-7: Summary of Alternatives

Environmental Topic Area	No Project Alternative	Arambel Business Park Alternative	KDN Retail Center/Business Park Alternative	Reduced Density Alternative
Aesthetics, Light, and Glare	Less Impact	Less Impact	Less Impact	Less Impact
Agricultural Resources	Less Impact	Less Impact	Less Impact	Less Impact
Air Quality/Greenhouse Gases	Less Impact	Less Impact	Less Impact	Less Impact
Biological Resources	Less Impact	Less Impact	Less Impact	Less Impact
Cultural Resources	Less Impact	Less Impact	Less Impact	Less Impact
Geology, Soils, and Seismicity	Less Impact	Less Impact	Less Impact	Less Impact
Hazards and Hazardous Materials	Less Impact	Less Impact	Less Impact	Less Impact
Hydrology and Water Quality	Less Impact	Less Impact	Less Impact	Less Impact

Table 5-7 (cont.): Summary of Alternatives

Environmental Topic Area	No Project Alternative	Arambel Business Park Alternative	KDN Retail Center/Business Park Alternative	Reduced Density Alternative
Land Use	Less Impact	Greater Impact	Similar Impact	Similar Impact
Noise	Less Impact	Less Impact	Less Impact	Less Impact
Population and Housing	Less Impact	Less Impact	Less Impact	Less Impact
Public Services and Utilities	Less Impact	Less Impact	Less Impact	Less Impact
Transportation	Less Impact	Less Impact	Less Impact	Less Impact
Source: Michael Brandman Associates, 2012.				

CEQA Guidelines Section 15126(e)(2) requires an EIR to identify an environmentally superior alternative. If the No Project Alternative is the environmentally superior alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives.

As shown in Table 5-7, the No Project Alternative would avoid or lessen significant environmental impacts across all topical areas and, therefore, would be the environmentally superior alternative. Therefore, pursuant to the CEQA Guidelines, an environmentally superior alternative must be selected from the remaining three alternatives.

The proposed project would result in six significant unavoidable impacts associated with agricultural resources, air quality and greenhouse gas emissions, noise, and transportation. Table 5-8 compares each alternative's impacts on the four significant unavoidable impact topical areas.

Table 5-8: Comparison of Significant Unavoidable Impacts

Topical Area	Arambel Business Park Alternative	KDN Retail Center/Business Park Alternative	Reduced Density Alternative
Agricultural Resources	776 acres of Important Farmland converted to non-agricultural use	104 acres of Important Farmland converted to non-agricultural use	661 acres of Important Farmland converted to non-agricultural use
Air Quality and Greenhouse Gases	776 acres of disturbance; 5,855 new AM peak-hour trips; 12,073 new PM peak-hour trips	104 acres of disturbance; 780 new AM peak-hour trips; 1,387 new PM peak-hour trips	661 acres of disturbance; 5,422 new AM peak-hour trips; 11,345 new PM peak-hour trips
Noise	5,855 new AM peak-hour trips; 12,073 new PM peak-hour trips	780 new AM peak-hour trips; 1,387 new PM peak-hour trips	5,422 new AM peak-hour trips; 11,345 new PM peak-hour trips
Transportation	5,855 new AM peak-hour trips; 12,073 new PM peak-hour trips	780 new AM peak-hour trips; 1,387 new PM peak-hour trips	5,422 new AM peak-hour trips; 11,345 new PM peak-hour trips
Source: Michael Brandman Associates, 2012.			

As shown in Table 5-8, the KDN Retail Center/Business Park Alternative would convert the least amount of Important Farmland to non-agricultural use, disturb the least amount of acreage, and generate the fewest peak-hour trips among the remaining alternatives, thereby yielding the greatest alleviation of the severity of the proposed project's significant unavoidable impacts. As such, the KDN Retail Center/Business Park Alternative is the Environmentally Superior Alternative.

5.8 - Alternatives Rejected From Further Consideration

CEQA Guidelines Section 15126.6(c) states that EIRs should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process, along with the reasons underlying the determination.

5.8.1 - Alternative Location

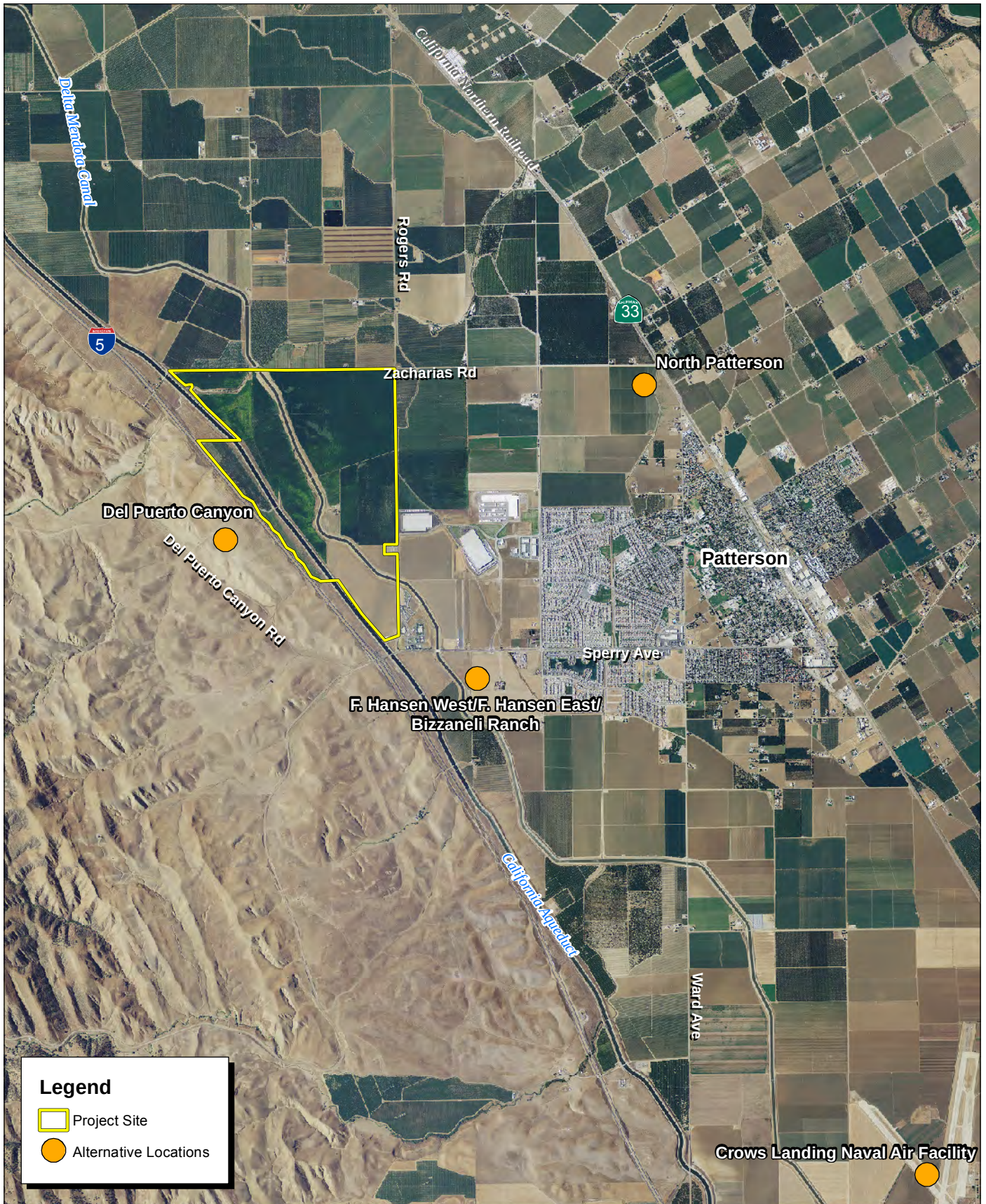
The following discussion will first describe the CEQA requirements for evaluation of alternative project locations and then evaluate potential alternative locations.

CEQA Guidelines Section 15126.6(f)(2) sets forth considerations to be used in evaluating an alternative location. The section states that the "key question" is whether any of the significant effects of the project would be avoided or substantially lessened by relocating the project. The CEQA Guidelines identify the following factors that may be taken into account when addressing the feasibility of an alternative location:

- 1). Site suitability
- 2). Economic viability
- 3). Availability of infrastructure
- 4). General Plan consistency
- 5). Other plans or regulatory limitations
- 6). Jurisdictional boundaries
- 7). Whether the project applicant can reasonably acquire, control, or otherwise have access to the alternative site.

The CEQA Guidelines establishes that only locations that would accomplish this objective should be considered.

Table 5-9 summarizes the feasibility of four potential alternative sites. Exhibit 5-1 depicts the locations of the four potential alternative sites. As shown in the table, none of the four sites are considered feasible for a variety of reasons.



Source: Stanislaus County NAIP, 2009.

Table 5-9: Alternative Site Feasibility Analysis

Site	Description	Feasibility Analysis
Crows Landing Naval Air Facility	A total of 1,528 acres consisting of a former military airfield owned by the County of Stanislaus located east of I-5 and west of SR-33 south of Patterson in unincorporated Stanislaus County. This facility is designated “Agriculture” by the Stanislaus County General Plan and zoned “General Agriculture – 40 Acre Minimum (A-2-40).” The site is outside of the Patterson Planning Area. The site is the subject of a development proposal (known as “West Park Logistics Center”) that is pending before the County of Stanislaus at the current time. The West Park proposal encompasses 2,796 acres (including the entire Naval Air Facility site) and contemplates airport, light industrial/business park, and renewable energy uses.	Not Feasible: The project applicants do not control or otherwise have access to this site. The Crows Landing Naval Air Facility is owned by the County of Stanislaus and is the subject of a pending development proposal. Neither the County nor the West Park applicant has indicated an interest in pursuing annexation into the City of Patterson. Thus, the City of Patterson (the Lead Agency) does not currently have jurisdictional control over this site and will likely not have jurisdictional control in the future. Regardless, even if annexation were to be pursued, this site is 5 miles south of the existing Patterson city limits; thus, annexing it would result in unusual, “peninsular”-shaped jurisdictional boundaries that would “leapfrog” agricultural land—a condition that is discouraged by LAFCO. Finally, the proposed project consists of the continuation and the expansion of the West Patterson Business Park; therefore, developing the project at a location that is non-contiguous to and a significant distance from the business park would be contrary to the underlying purpose of the project. These factors preclude the possibility of developing the project at this location.
Del Puerto Canyon	Approximately 650 acres located west of I-5 and east of Del Puerto Canyon Road in unincorporated Stanislaus County. This area is designated “Agriculture” by the Stanislaus County General Plan and zoned “General Agriculture – 40 Acre Minimum (A-2-40).” This area is also designated “Hillside Mixed Use” by the City of Patterson General Plan, which is non-binding. This area contains rolling topography, including foothills along I-5. Land use activities include cultivated agriculture (orchards) and cattle grazing. Del Puerto Creek passes through the northern portion of this area.	Not Feasible: Although one of the project applicants owns this site, there are several factors that make this site infeasible. First, annexing this site into the Patterson city limits would result in unusual, “peninsular”-shaped jurisdictional boundaries that would “leapfrog” agricultural land (i.e., the project site)—a condition that is discouraged by LAFCO. Second, the rolling topography that dominates most of this site would require mass grading that may result in more severe impacts associated with aesthetics; biological resources; cultural resources; geology, soils, and seismicity; and hydrology and water quality relative to the proposed project. Lastly, the City of Patterson General Plan calls for “mixed use hillside development” (i.e., estate residential, retail/service commercial, recreation, etc.) within this area, whereas the project consists of light industrial, business park, and general commercial development.

Table 5-9 (cont.): Alternative Site Feasibility Analysis

Site	Description	Feasibility Analysis
Del Puerto Canyon (cont.)		As such, developing the proposed project's end uses would be in conflict with the General Plan's vision for this area. These factors preclude the possibility of developing the project at this location.
F. Hansen West/F. Hansen East/ Bizzaneli Ranch	Approximately 215 acres located south of Sperry Avenue and east of I-5 within the Patterson city limits. The western portion of this site (~34 acres) is designated "General Commercial" by the City of Patterson General Plan and zoned "General Commercial." The eastern portion of this site (~181 acres) is designated "Light Industrial" by the City of Patterson General Plan and zoned "West Patterson Light Industrial." Land use consists of cultivated agriculture (row crops) and undeveloped land.	Not Feasible: The project applicants do not control or otherwise have access to this site. Furthermore, the acreage of this site (215 acres) is less than a quarter of the net acreage of the project site (880 acres) and, thus, is too small to accommodate the level of development contemplated by the proposed project. These factors preclude the possibility of developing the project at this location.
North Patterson	Approximately 950 acres located east of Rogers Road, south of Zacharias Road, and east of SR-33 in unincorporated Stanislaus County. This area is designated "Agriculture" by the Stanislaus County General Plan and zoned "General Agriculture – 40 Acre Minimum (A-2-40)." This area is also designated "Low Density Residential" by the City of Patterson General Plan, which is non-binding. Land use consists of cultivated agriculture (orchards and row crops) and undeveloped land. Most of this area is within a 100-year floodplain of Del Puerto Creek classified as Flood Zone "AO," which indicates that flood depths would range from 1 to 3 feet.	Not Feasible: The project applicants do not control or otherwise have access to this site. This area is contemplated for residential use by the City of Patterson General Plan and adjoins existing residential uses that are currently within the city limits. As such, developing the proposed project's business parking, light industrial, and general commercial uses would be in conflict with the General Plan's vision for this area. In addition, because this area is within a 100-year floodplain, significant grading would be required to elevate buildings above the flood elevation and significant onsite and offsite drainage improvements would be required. These improvements may be economically prohibitive. Finally, this area is not well suited for the proposed project's business park, light industrial, and general commercial uses because of its distance from I-5 and adjacency to residential areas. As such, there is a greater potential for land use compatibility issues associated with light and glare, noise, and truck traffic on local roadways. These factors preclude the possibility of developing the project at this location.
Source: Michael Brandman Associates, 2012.		

SECTION 6: OTHER CEQA CONSIDERATIONS

6.1 - Significant Unavoidable Impacts

CEQA Guidelines Section 15126.2(a)(b) requires an EIR to identify and focus on the significant environmental effects of the proposed project, including effects that cannot be avoided if the proposed project were implemented.

This section describes significant impacts, including those that can be mitigated but not reduced to a level of less than significant. Where there are impacts that cannot be alleviated without imposing a project alternative, their implications, and the reason why the project is being proposed, notwithstanding their effect, is described. With implementation of the proposed project, six significant impacts that cannot be avoided would occur. Each significant unavoidable impact is discussed below.

- **Conversion of Important Farmland:** Buildout of the proposed project would result in the conversion of Important Farmland to non-agricultural use. Mitigation is proposed requiring the applicant to permanently preserve farmland elsewhere in Stanislaus County. However, the preservation of farmland elsewhere would not fully offset the loss of Important Farmland; therefore, the residual significance of this impact is significant and unavoidable.
- **Air Quality Attainment Plan Consistency:** The proposed project would be inconsistent with the San Joaquin Valley Air Pollution Control District's regional air quality planning assumptions. Mitigation is proposed requiring the implementation of feasible emissions reduction measures; however, these measures would not reconcile this inconsistency. Therefore, the residual significance of this impact is significant and unavoidable.
- **Cumulatively Considerable Net Increase of Nonattainment Criteria Pollutants:** The project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors). Mitigation is proposed requiring the implementation of air emissions reduction measures, but it would not fully reduce this impact to a level of less than significant. Therefore, the residual significance is significant and unavoidable.
- **Combined Transportation and Non-Transportation Noise:** The proposed project would generate vehicle trips that would contribute to unacceptable combined transportation and non-transportation noise levels. No feasible mitigation is available to fully mitigate this impact to a level of less than significant. As such, the residual significance of this impact is significant and unavoidable.
- **Existing Plus Phase I Traffic:** Phase I of the proposed project would generate vehicle trips that would contribute to unacceptable traffic operations under Existing Plus Phase I conditions.

Mitigation is proposed that would require the applicant to contribute fees to fund necessary improvements; however, there is uncertainty regarding actual implementation of the improvements. As such, the residual significance of this impact is significant and unavoidable.

- **2035 Cumulative Traffic:** The proposed project would generate vehicle trips that would contribute to unacceptable traffic operations under 2035 Cumulative conditions. Mitigation is proposed that would require the applicant to contribute fees to fund necessary improvements; however, there is uncertainty regarding actual implementation of the improvements. As such, the residual significance of this impact is significant and unavoidable.

6.2 - Growth-Inducing Impacts

There are two types of growth-inducing impacts that a project may have: direct and indirect. To assess the potential for growth-inducing impacts, the project's characteristics that may encourage and facilitate activities that individually or cumulatively may affect the environment must be evaluated (CEQA Guidelines Section 15126.2(d)).

Direct growth-inducing impacts occur when the development of a project imposes new burdens on a community by directly inducing population growth, or by leading to the construction of additional developments in the same area. Also included in this category are projects that remove physical obstacles to population growth (such as a new road into an undeveloped area or a wastewater treatment plant with excess capacity that could allow additional development in the service area). Construction of these types of infrastructure projects cannot be considered isolated from the development they facilitate and serve. Projects that physically remove obstacles to growth, or projects that indirectly induce growth may provide a catalyst for future unrelated development in an area such as a new residential community that requires additional commercial uses to support residents.

6.2.1 - Direct Population Growth

There are two types of direct growth inducement: construction of new dwelling units and the creation of new job opportunities.

The proposed project does not involve the construction of new dwelling units; therefore, this precludes the possibility of direct growth inducement.

The proposed project consists of the development of approximately 13.47 million square feet of light industrial, business park, and general commercial uses to be built out between 2013 and 2032 under the most aggressive schedule¹. The project is anticipated to create employment opportunities for 10,093 full-time workers at buildout in 2032. This averages to 506 new jobs per year.

¹ It is likely that actual buildout of the project would occur well after 2032; however, for the purposes of evaluating a "worst-case" scenario, this EIR will assume the entire project is built out by 2032.

The California Economic Development Department indicates that as of February 2012, there were 1,400 unemployed persons in Patterson (23.1 percent unemployment) and 40,400 unemployed persons in Stanislaus County (17.1 percent unemployment). This indicates that there is ample local labor to fill the new jobs created in the near term.

Over the long term, the City of Patterson General Plan projects a buildout population of 66,673 persons sometime after 2030, or an increase of more than 46,000 persons relative to the 2011 population estimate. To the extent that project employees may move to Patterson as a result of their employment, this in itself would not be considered “growth inducement,” because significant population growth is contemplated by the General Plan.

6.2.2 - Indirect Population Growth

Indirect growth inducement occurs when “barriers to growth” are removed, such as the extension of essential utilities to unserved areas or when land designated for non-urban use (e.g., agricultural) is re-designated for urban use.

The proposed project would include the extension of roads, storm drainage, water, sewer, electricity, and natural gas services to the project site. The project site is contiguous to the existing West Patterson Business Park and Villa del Lago developments. The City of Patterson General Plan designates the project site “Light Industrial” and “General Commercial” and, thus, contemplates the extension of urban infrastructure to this area. Furthermore, the utilities that would serve the project site are sized to provide capacity for only the proposed project and not for any future projects that could potentially be developed on neighboring properties. As such, the proposed project would not result in indirect population growth.

6.3 - Significant Irreversible Changes

The environmental effects of the proposed project are summarized in Section ES, Executive Summary, and are analyzed in detail in Section 3, Environmental Impact Analysis, of this EIR.

As mandated by the CEQA Guidelines, the EIR must address any significant irreversible environmental change that would result from implementation of the proposed project. Specifically, pursuant to the CEQA Guidelines (Section 15126.2(c)), such an impact would occur if:

- The project would involve a large commitment of nonrenewable resources;
- Irreversible damage can result from environmental accidents associated with the project; and
- The proposed consumption of resources is not justified (e.g., the project results in the wasteful use of energy).

Development of the proposed project would result in an irretrievable commitment of non-renewable resources such as energy supplies and other construction-related materials. The energy resource

demands would be used for construction, heating, and cooling of buildings; transportation of people and goods; heating and refrigeration; lighting; and other associated energy needs. However, the proposed project would implement a number of design features and mitigation measures that would reduce energy demand, water consumption, wastewater generation, and solid waste generation that would collectively reduce the demand for resources. This would result in the emission and generation of less pollution and effluent and lessen the severity of corresponding environmental effects. Although the proposed project would result in an irretrievable commitment of non-renewable resources, the commitment of these resources would not be significantly inefficient, unnecessary, or wasteful.

The proposed project would develop as much as 13.47 million square feet of business park, general commercial, and light industrial uses on the project site. None of these uses would handle large quantities of hazardous materials or engage in activities that have the potential to result in serious environmental accidents (such as chemical manufacturing, mineral extraction, and refining). As such, the proposed project would not have the potential to cause serious environmental accidents.

The proposed project would result in greater demand for resources such as energy and water; however, such consumption would not be unusually high or disproportionate relative to similar land uses (refer to Section 3.12, Public Services and Utilities for further discussion). The proposed project would implement a number of design features and mitigation measures to reduce energy and water consumption. These design features and mitigation measures exceed state and local requirements for energy and water conservation and demonstrate that the proposed project's consumption would not be unjustified.

6.4 - Energy Conservation

Public Resources Code Section 21100(b)(3) and CEQA Guidelines Section 15126.4 require EIRs to describe, where relevant, the wasteful, inefficient, and unnecessary consumption of energy caused by a project. In 1975, largely in response to the oil crisis of the 1970s, the State Legislature adopted AB 1575, which created the California Energy Commission (CEC). The statutory mission of the CEC is to forecast future energy needs, license thermal power plants of 50 megawatts or larger, develop energy technologies and renewable energy resources, plan for and direct State responses to energy emergencies, and—perhaps most importantly—promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code Section 21100(b)(3) to require EIRs to consider the wasteful, inefficient, and unnecessary consumption of energy caused by a project. Thereafter, the State Resources Agency created Appendix F of the CEQA Guidelines. Appendix F is an advisory document that assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. For the reasons set forth below, this EIR concludes that the proposed project will not result in the wasteful, inefficient, and unnecessary consumption of energy, will not cause the

need for additional natural gas or electrical energy-producing facilities, and, therefore, will not create a significant impact on energy resources.

6.4.1 - Regulatory Setting

Federal and state agencies regulate energy use and consumption through various means and programs. At the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. Generally, federal agencies influence and regulate transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through funding of energy-related research and development projects, and through funding for transportation infrastructure improvements. At the state level, the California Public Utilities Commission (CPUC) and the CEC are two agencies with authority over different aspects of energy. The CPUC regulates privately owned utilities in the energy, rail, telecommunications, and water fields. The CEC collects and analyzes energy-related data, prepares statewide energy policy recommendations and plans, promotes and funds energy efficiency programs, and adopts and enforces appliance and building energy efficiency standards. California is exempt under federal law from setting state fuel economy standards for new on-road motor vehicles. Some of the more relevant federal and state energy-related laws and plans are discussed below.

Federal Energy Policy and Conservation Act

The Federal Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the United States Department of Transportation, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 miles per gallon. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per gallon. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is not determined for each individual vehicle model; rather, compliance is determined on the basis of each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. The Corporate Average Fuel Economy (CAFE) program, which is administered by United States Environmental Protection Agency, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The United States Environmental Protection Agency calculates a CAFE value for each manufacturer, based on city and highway fuel economy test results and vehicle sales. On the basis of the information generated under the CAFE program, the United States Department of Transportation is authorized to assess penalties for noncompliance. In the course of its over 30-year history, this regulatory program has resulted in vastly improved fuel economy throughout the nation's vehicle fleet.

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs) such as ABAG were required to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process for specific projects would then address these policies. Another requirement was to consider the consistency of transportation planning with federal, State, and local energy goals. Through this requirement, energy consumption was expected to become a decision criterion, along with cost and other values that determine the best transportation solution.

The Transportation Equity Act for the 21st Century (TEA-21)

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including providing assistance to public agencies and fleet operators, encouraging urban designs that reduce vehicle miles traveled, and accommodating pedestrian and bicycle access.

Title 24, Energy Efficiency Standards

Title 24, which was promulgated by the CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption, provides energy efficiency standards for residential and nonresidential buildings. According to the CEC, since the energy efficiency standards went into effect in 1978, it is estimated that California residential and nonresidential consumers have reduced their utility bills by at least \$15.8 billion. The CEC further

estimates that by 2011, residential and nonresidential consumers will save an additional \$43 billion in energy costs.

In 2008, the CEC adopted new energy efficiency standards. Effective January 1, 2010, all projects that apply for a building permit must adhere to the new 2008 standards. The 2008 standards reflect the greenhouse gas reduction requirements of the California Global Warming Solutions Act of 2006 (Assembly Bill 32).

Because the adoption of Title 24 post-dates the adoption of AB 1575, it has generally been the presumption throughout the State that compliance with Title 24 (as well as compliance with the federal and state regulations discussed above) ensures that projects will not result in the inefficient, wasteful, and unnecessary consumption of energy. As is the case with other uniform building codes, Title 24 is designed to provide certainty and uniformity throughout the State while ensuring that the efficient and non-wasteful consumption of energy is carried out through design features. Large infrastructure transportation projects that cannot adhere to Title 24 design-build performance standards may, depending on the circumstances, undertake a more involved assessment of energy conservation measures in accordance with some of the factors set forth in Appendix F of the CEQA Guidelines. As an example, pursuant to the California Department of Transportation CEQA implementation procedures and FHWA Technical Advisory 6640.8A, a detailed energy study is generally only required for large-scale infrastructure projects. However, for the vast majority of residential and nonresidential projects, adherence to Title 24 is deemed necessary to ensure that no significant impacts occur from the inefficient, wasteful, and unnecessary consumption of energy. As a further example, the adoption of federal vehicle fuel standards, which have been continually improved since their original adoption in 1975, have also protected against the inefficient, wasteful, and unnecessary use of energy.

6.4.2 - Energy Requirements of the Proposed Project

Short-term construction and long-term operational energy consumption are discussed below.

Short-Term Construction

The U.S. Environmental Protection Agency (EPA) regulates non-road diesel engines. The EPA has no formal fuel economy standards for non-road (e.g., construction) diesel engines but does regulate diesel emissions, which indirectly affects fuel economy. In 1994, the EPA adopted the first set of emissions standards (Tier 1) for all new non-road diesel engines greater than 37 kilowatts (kW) (50 horsepower [hp]). The Tier 1 standards were phased in for different engine sizes between 1996 and 2000, reducing nitrogen oxide (NO_x) emissions from these engines by 30 percent. The EPA has since adopted more stringent emission standards for NO_x, hydrocarbons, and particulate matter from new, non-road diesel engines. This program includes the first set of standards for non-road diesel engines less than 37 kW. It also phased in more stringent Tier 2 emission standards from 2001 to 2006 for all engine sizes and added more stringent Tier 3 standards for engines between 37 and 560 kW (50 and 750 hp) from 2006 to 2008. These standards reduced non-road diesel engine emissions by 60 percent

for NO_x and 40 percent for particulate matter (PM) from Tier 1 emission levels. In 2004, the EPA issued the Clean Air Non-road Diesel Rule. This rule, which took effect in 2008 and will be fully phased in by 2014, will cut emissions from non-road diesel engines by more than 90 percent. These emission standards are intended to promote advanced clean technologies for non-road diesel engines that improve fuel combustion, but they also result in slight decreases in fuel economy.

Table 6-1 provides estimates of the project project's construction fuel consumption. The construction assumptions contained in the tables are the same assumptions used in the construction air quality analysis in Section 3.3, Air Quality/Greenhouse Gas Emissions.

Table 6-1: Construction Fuel Consumption

Phase	Fuel Consumption (gallons)
1	5,596,188
2	2,670,807
3	1,974,690
4	1,444,759
Total	9,909,244
Source: Michael Brandman Associates, 2012.	

As shown in Table 6-1, construction activities associated with the proposed project would be estimated to consume 9.9 million gallons of diesel or gasoline. The large amount of fuel consumed during construction reflects both the size and scale of the proposed project. The proposed project would occupy approximately 950 net acres and involve the development of approximately 11.75 million square feet of business park, general commercial, and light industrial uses at buildout. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the State. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Long-Term Operations

Transportation Energy Demand

Vehicle fuel efficiency is regulated at the federal level. Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic and Safety Administration is responsible for establishing additional vehicle standards and for revising existing standards.

As of Model Year 2010, the fuel economy standard for new passenger cars is 27.5 miles per gallon and the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) is 23.5 miles per gallon. Heavy-duty vehicles (vehicles and trucks over 8,500 pounds gross vehicle

weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is not determined for each individual vehicle model; rather, compliance is determined by each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

Table 6-2 provides an estimate of the daily fuel consumed by vehicles traveling to and from the proposed project. These estimates were derived using the same assumptions used in the operational air quality analysis in Section 3.3, Air Quality/Greenhouse Gas Emissions.

Table 6-2: Daily Vehicle Fuel Consumption

Daily Vehicle Miles Traveled	Average Fuel Economy – All Motor Vehicles (miles/gallon)	Total Daily Fuel Consumption (gallons)
3,485,718	17.6	198,052
Notes: Daily vehicle miles traveled provided by URBEMIS air quality modeling output (Appendix C). Average fuel economy is provided by United States Department of Transportation, Bureau of Transportation Statistics "Annual Vehicle Distance Traveled in Miles and Related Data – 2009" and reflects fuel economy of all motor vehicles in 2009 (i.e., passenger vehicles, trucks, motorcycles, etc.), regardless of age. Source: Michael Brandman Associates, 2012.		

As shown in Table 6-2, daily transportation activities associated with the project would be estimated to consume 198,052 gallons of diesel or gasoline. The large amount of fuel consumed on a daily basis reflects both the size and scale of the proposed project. The proposed project would occupy approximately 880 net acres and involve the development of approximately 13.47 million square feet of business park, general commercial, and light industrial uses at buildout. The project is estimated to employ 8,978 full-time workers at buildout. As discussed in Section 3.13, Transportation, the proposed project would generate 11,755 AM peak-hour trips and 15,319 PM peak-hour trips at buildout. (Note that trips would also be generated outside of the AM and PM peak hours). Thus, when fuel consumption is considered in context with the project characteristics, it would not be considered any more inefficient, wasteful, or unnecessary than for any other similar land use activities in the region.

Building Energy Demand

The proposed project is estimated to demand 211 million kWh of electricity on an annual basis and 785 million cubic feet of natural gas on an annual basis at buildout. Turlock Irrigation District and Pacific Gas and Electric Company provided written confirmation indicating that adequate electricity and natural gas supplies and transmission capacity exist to serve the expanded project; refer to Appendix G. Refer to Impact PSU-7 in Section 3.12, Public Services and Utilities for further discussion.

All project buildings will be required to comply with the energy efficiency standards set forth in the latest adopted edition of the California Green Building Standards at the time building permits are

sought. The California Green Building Standards is widely regarded as one of the most stringent energy efficiency codes in the United States. As such, it would be expected that building energy consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than for any other similar buildings in the region.

SECTION 7: EFFECTS FOUND NOT TO BE SIGNIFICANT

7.1 - Introduction

This section is based on the Notice of Preparation (NOP), dated August 4, 2011, and contained in Appendix A of this Environmental Impact Report (EIR). The NOP was prepared to identify the potentially significant effects of the proposed projects and was circulated for public review between August 4, 2011 and September 6, 2011. In the course of this evaluation, certain impacts were found to be less than significant because the proposed project's characteristics would not create such impacts. This section provides a brief description of effects found not to be significant or less than significant, based on the NOP comments or more detailed analysis conducted as part of the EIR preparation process. Note that a number of impacts that are found to be less than significant are addressed in the various EIR topical sections (Sections 3.1 through 3.13) to provide more comprehensive discussion of why impacts are less than significant, in order to better inform decision makers and the general public.

7.2 - Effects Found Not To Be Significant

7.2.1 - Agriculture and Forest Resources

Conversion of Forestland

The project site contains cultivated agricultural land and does not contain any active forestland or support trees that could be commercially harvested. These conditions preclude the possibility of the proposed project converting forest land to non-forest use. No impacts would occur.

Conflicts with Forest Zoning

The project site is zoned "General Agriculture – 40 Acre Minimum" by the Stanislaus County Zoning Ordinance, which is a non-forest zoning designation. The proposed Master Development Plan would re-zone the site to "General Commercial," "West Patterson Industrial Business Park," and "West Patterson Light Industrial," which are also non-forest zoning designations. These conditions preclude the possibility of the proposed project conflicting with existing forest land zoning. No impact would occur.

7.2.2 - Biological Resources

Conservation Plans

The project site is not within the boundaries of a habitat conservation plan or natural community conservation plan. This condition precludes the possibility of the proposed project conflicting with the provisions of such a plan. No impacts would occur.

7.2.3 - Geology, Soils, and Seismicity

Septic or Alternative Wastewater Disposal Systems

The proposed project would be served by sanitary sewer service provided by City of Patterson, which conveys effluent to a municipal wastewater treatment plant. The project applicant has proposed an onsite wastewater water treatment plant as an option, in the event that conveyance or treatment capacity is unavailable to serve the proposed project. Treated effluent generated by the onsite wastewater water treatment plant would be used for non-potable irrigation use; it would not be directly disposed of into the soil like a septic system. As such, the soils on the project site would be suitable for the use of such a wastewater water treatment system. Finally, the existing septic systems within the project site would be removed as part of the proposed project. No impacts would occur.

7.2.4 - Hazards and Hazardous Materials

Exposure of Schools to Hazardous Materials

Apricot Valley School, the closest school to the project site, is more than 1.25 miles to the east. This condition precludes the possibility of the proposed project exposing schools within 0.25 mile of the project site to hazardous materials. No impacts would occur.

Private Airstrips

There are no private airstrips in the project vicinity. This condition precludes the possibility of the proposed project exposing persons residing or working in the project vicinity to aviation hazards associated with private airstrips. No impacts would occur.

(Although the Patterson Airport is privately owned, it is subject to the provisions of the Stanislaus County Airport Land Use Commission Plan. As such, impacts on this aviation facility are evaluated in Impact HAZ-3 in Section 3.7, Hazards and Hazardous Materials.)

Wildland Fires

The project site contains cultivated agricultural uses and is surrounded by Interstate 5 (I-5) (west), cultivated agricultural uses (north), the West Patterson Business Park (east), and the Villa del Lago highway commercial center (south). Neither the project site nor the surrounding land uses are susceptible to wildland fires. Although the Diablo Range foothills to the west of I-5 may be susceptible to wildland fires, they are sufficiently far enough from the project site such that any fire that occurs in that area would be unlikely to spread to the project site because of the freeway serves as a formidable barrier. As such, this condition precludes the possibility of the proposed project being exposed to hazards associated with wildland fires. No impacts would occur.

7.2.5 - Hydrology and Water Quality

Levee or Dam Failure

The California Aqueduct and Delta-Mendota Canal are protected with levees. Both facilities are concrete-lined and buttressed by earthen embankments. These characteristics make it highly unlikely that levee failure would occur. No impacts would occur.

The dam failure inundation area for the San Luis Reservoir encompasses the area within the eastern portion of Patterson, between Elm Avenue and the San Joaquin River. The project site is located approximately 3 miles to the west of this area. This condition precludes the possibility of the project site being inundated by floodwaters as a result of dam failure. No impacts would occur.

Seiches, Tsunamis, or Mudflows

There are no inland bodies of water near the project site, a condition that precludes the possibility of seiche inundation. The project is approximately 70 miles from the Pacific Ocean, a condition that precludes the possibility of tsunami inundation. The project site is not located in a volcanically active area or adjacent to steep slopes, a condition that precludes mudflow inundation. No impacts would occur.

7.2.6 - Land Use

Division of an Established Community

The project site contains one single-family residence. The proposed project would result in the removal of this residence. However, the removal of a single residence would not constitute the division of an established community.

The California Aqueduct and Delta-Mendota Canal traverse the project site in a north-south direction. Roadways exist along the sides of the waterways within the right-of-way of each facility that are accessible to the general public. The proposed project would maintain the public's access to these facilities and, therefore, would not sever these linkages.

No impacts would occur.

Conservation Plans

The project site is not within the boundaries of a habitat conservation plan or natural community conservation plan. This condition precludes the possibility of the proposed project conflicting with the provisions of such a plan. No impacts would occur.

7.2.7 - Mineral Resources

Mineral Resources of Statewide or Local Importance

There are no current mineral extraction activities on the project site. The project site is not located in a Mineral Resource Zone designated by the State. The City of Patterson General Plan does not identify any locally significant mineral resources on the project site. Therefore, the development of

the proposed project would not result in the loss of a mineral resource of statewide or local significance. No impacts would occur.

7.2.8 - Public Services

Schools

The proposed project does not contain any residential uses and would not directly induce population growth. The estimated 10,093 employment opportunities created by the proposed project would occur over a 20-year period. As discussed in Section 3.11, Population and Housing, there is ample available local labor to fill the new employment opportunities created in the near-term such that it would be unlikely that an influx of significant population growth would occur in Patterson that would result in a need for new or expanded school facilities. Over the long term, the City of Patterson General Plan projects a buildout population of 66,673 persons sometime after 2030, or an increase of more than 46,000 persons relative to the 2011 population estimate. To the extent that future project employees may relocate to Patterson, this would be in accordance with the General Plan's growth projections. Furthermore, this level of population growth would require the construction of new dwelling units, the development of which would be tied to the timely provision of essential public services and utilities, including school facilities. Therefore, the proposed project would not result in the need for new expanded school facilities. No impact would occur.

Parks

The proposed project does not contain any residential uses and would not directly induce population growth. The estimated 10,093 employment opportunities created by the proposed project would occur over a 20-year period. As discussed in Section 3.11, Population and Housing, there is ample available local labor to fill the new employment opportunities created in the near-term such that it would be unlikely that an influx of significant population growth would occur in Patterson that would result in a need for new or expanded park facilities. Over the long term, the City of Patterson General Plan projects a buildout population of 66,673 persons sometime after 2030, or an increase of more than 46,000 persons relative to the 2011 population estimate. To the extent that future project employees may relocate to Patterson, this would be in accordance with the General Plan's growth projections. Furthermore, this level of population growth would require the construction of new dwelling units, the development of which would be tied to the timely provision of essential public services and utilities, including parks. Therefore, the proposed project would not result in the need for new expanded school facilities. No impact would occur.

Other Public Facilities

The proposed project does not contain any residential uses and would not directly induce population growth. The estimated 10,093 employment opportunities created by the proposed project would occur over a 20-year period. As discussed in Section 3.11, Population and Housing, there is ample available local labor to fill the new employment opportunities created in the near term such that it would be unlikely that an influx of significant population growth would occur in Patterson that would

result in a need for new or expanded libraries. Over the long term, the City of Patterson General Plan projects a buildout population of 66,673 persons sometime after 2030, or an increase of more than 46,000 persons relative to the 2011 population estimate. To the extent that future project employees may relocate to Patterson, this would be in accordance with the General Plan's growth projections. Furthermore, this level of population growth would require the construction of new dwelling units, the development of which would be tied to the timely provision of essential public services and utilities, including libraries and other public facilities. Therefore, the proposed project would not result in the need for new expanded school facilities. No impact would occur.

7.2.9 - Recreation

New or Expanded Recreational Facilities

The proposed project does not contain any residential uses and would not directly induce population growth. The estimated 10,093 employment opportunities created by the proposed project would occur over a 20-year period. As discussed in Section 3.11, Population and Housing, there is ample available local labor to fill the new employment opportunities created in the near term such that it would be unlikely that an influx of significant population growth would occur in Patterson that would result in a need for new or expanded recreational facilities. Over the long term, the City of Patterson General Plan projects a buildout population of 66,673 persons sometime after 2030, or an increase of more than 46,000 persons relative to the 2011 population estimate. To the extent that future project employees may relocate to Patterson, this would be in accordance with the General Plan's growth projections. Furthermore, this level of population growth would require the construction of new dwelling units, the development of which would be tied to the timely provision of essential public services and utilities, including recreational facilities. Therefore, the proposed project would not result in the need for new expanded school facilities. No impact would occur.

Physical Deterioration of Recreational Facilities

The proposed project does not contain any residential uses and would not directly induce population growth. The estimated 10,093 employment opportunities created by the proposed project would occur over a 20-year period. As discussed in Section 3.11, Population and Housing, there is ample available local labor to fill the new employment opportunities created in the near term such that it would be unlikely that an influx of significant population growth would occur in Patterson that would result in the physical deterioration of recreational facilities. Over the long term, the City of Patterson General Plan projects a buildout population of 66,673 persons sometime after 2030, or an increase of more than 46,000 persons relative to the 2011 population estimate. To the extent that future project employees may relocate to Patterson, this would be in accordance with the General Plan's growth projections. Furthermore, this level of population growth would require the construction of new dwelling units, the development of which would be tied to the timely provision of essential public services and utilities, including new or expanded recreational facilities. Therefore, the proposed project would not result in the need for new expanded school facilities. No impact would occur.

SECTION 8: PERSONS AND ORGANIZATIONS CONSULTED/LIST OF PREPARERS

8.1 - Persons and Organizations Consulted

8.1.1 - Lead Agency

City of Patterson

City Manager's Office

City Manager Rod Butler

Community Development Department

City Planner Joel Andrews

Planning Technician II Denise Melo

Planning Technician II Lisa Ochoa

Fire Department

Chief Steven Hall

Police Services (Stanislaus County Sheriff's Department)

Chief Tori Hughes

Public Works Department

Director.....Mike Willet

8.1.2 - Public Agencies

State Agencies

California Department of Transportation, District 10

Chief – Office of Intermodal Planning..... Tom Dumas

California Department of Transportation, Division of Aeronautics

Aviation Environmental Specialist.....Phillip Crimmins

California Department of Water Resources

Chief – State Water Project Operations Support Office.....David Samson

Native American Heritage Commission

Program Analyst..... Dave Singleton

Regional Water Quality Control Board, Central Valley Region

Environmental Scientist Genevieve Sparks

Local Agencies

Del Puerto Water District

General Manager William Harrison

San Joaquin Valley Air Pollution Control District

Director of Permit Services..... David Warner
Permit Services Manager Arnaud Marjollet

San Luis & Delta-Mendota Water Authority

Representative..... Jaime McNeil

Stanislaus Local Agency Formation Commission

Executive Officer Marjorie Blom

Turlock Irrigation District

Senior Electrical Engineering Technician..... Todd Troglin

West Stanislaus County Fire Protection District

Special Projects Coordinator..... Richard Gaiser

8.1.3 - Private Businesses, Organizations, and Individuals

J.B. Anderson Land Use Planning (on behalf of Del Puerto Health Care District)

Land Planner John Anderson

Manatt, Phelps, Phillips (on behalf of Villa Del Lago Associates, LLC and Patterson Hotel Associates, LLC)

Attorney Kristina Lawson

Pacific Gas and Electric Company

Senior New Business Representative..... Curt Sousa

8.2 - List of Preparers

8.2.1 - Lead Agency

City of Patterson

Community Development Department

City Planner Joel Andrews
Planning Technician II Denise Melo
Planning Technician II Lisa Ochoa

8.2.2 - Lead Consultant

Michael Brandman Associates

Project Director Jason M. Brandman
Project Manager Grant Gruber
Air Quality Scientist Chryss Meier
Senior Noise Analyst Gregory Tonkovich, AICP, INCE
Senior Project Archaeologist Carrie Wills, RPA
Senior Biologist Michelle Korpos
Biologist Angela McIntire
Senior Editor Sandra L. Tomlin
Technical Editor/Word Processor Ed Livingston
GIS Technician Karlee McCracken
Graphic Artist Brandon Price
Administrative Assistant Alicia Yuen
Reprographics José Morelos
Reprographics Cole Forbes

8.2.3 - Subconsultants

TJKM Transportation Consultants

Project Manager Christopher Thnay, PE, AICP
Quality Assurance/Quality Control Chris Kinzel, PE
Senior Transportation Modeler Pawan Mulukutla, PE
Project Engineer Jeffrey Lacap, EIT
Graphics Designer Dan Harrison
Word Processor Cindy DeRouchey

8.2.4 - City's Technical Consultants

AECOM

Principal Gary Rogers

Lee and Ro

Principal James Pollock

8.3 - Applicant Team

8.3.1 - Applicants

Arambel Business Park

Jeff Arambel

KDN Retail Center/Business Park

Donna Moore

Nancy Pedersen

8.3.2 - Entitlements/Project Management

Principal Joe Hollowell, III

8.3.3 - Engineer

GDR Engineering

Principal Max Garcia

Civil Engineer Rick Ringler

Civil Engineer Ken Irwin

Civil Engineer Jason Andrews, Sr.

8.3.4 - Legal Counsel

Mayol & Barringer

Attorney James D. Mayol

SECTION 9: REFERENCES

- Association of Environmental Professionals. 2011. California Environmental Quality Act Statute & Guidelines 2011.
- California Air Pollution Control Officers Association. 2008. CEQA & Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. January.
- California Air Resources Board. 2011. Almanac Emission Project Data: 2010 Estimated Annual Averages, Stanislaus County. Website: <http://www.arb.ca.gov/ei/emissiondata.htm>. Accessed December 13, 2011.
- California Air Resources Board. 2011. “Ambient Air Quality Standards.” Website: <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>. Accessed December 13, 2011.
- California Air Resources Board. 2011. “Naturally-Occurring Asbestos.” Website: <http://www.arb.ca.gov/toxics/asbestos/asbestos.htm>. Accessed December 13, 2011.
- California Air Resources Board. 2011. “Top 4 Summary.” Website: <http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start>. Accessed December 13, 2011.
- California Air Resources Board. 2010. Greenhouse Gas Inventory Data – 2000 to 2008. Website: www.arb.ca.gov/cc/inventory/data/data.htm. Accessed December 1, 2011.
- California Air Resources Board. 2009. Scoping Plan Measures Implementation Timeline. November 25, 2009. Website: www.arb.ca.gov/cc/scopingplan/sp_measures_implementation_timeline.pdf. Accessed November 23, 2011.
- California Air Resources Board. 2009. State Area Designations. Website: <http://www.arb.ca.gov/desig/adm/adm.htm>. Accessed November 23, 2011.
- California Air Resources Board. 2008. Climate Change Proposed Scoping Plan, a Framework for Change. December.
- California Air Resources Board. 2007. Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations.
- California Air Resources Board. 2005. Air Quality and Land Use Planning Handbook: A Community Health Perspective. April.
- California Air Resources Board. 2005. Air Toxic Control Measure: Requirements to Reduce Idling Emissions from New and In-Use Trucks, Beginning in 2008.
- California Air Resources Board. 2003. Airborne Toxic Control Measure (ACTM) for In-Use Diesel-Fueled Transport Refrigeration Units (TRUs), TRU Generator Sets and Facilities Where TRUs Operate, Staff Report: Initial Statement of Reasons (ISOR) Appendix D, OFFROAD Modeling Change Technical Memo.

References

- California Air Resources Board. 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October.
- California Air Resources Board. 1998. Identification of Diesel Exhaust as a Toxic Air Contaminant.
- California Department of Conservation, Division of Mines and Geology. 2000. General Location Guide for Ultramafic Rocks in California - Areas More Likely to Contain Naturally Occurring Asbestos (DMG Open-File Report 2000-019). August.
- California Department of Conservation, Farmland Mapping and Monitoring Program. 2011. Stanislaus County Important Farmland 2010. October.
- California Department of Finance. 2011. E-5 Population and Housing Estimates for Cities, Counties and the State, 2010-2011, with 2010 Benchmark. May.
- California Department of Health Services. 2010. California Indoor Radon Levels Sorted by Zip Code. May 5.
- California Department of Resources Recycling and Recovery. 2011. "Waste Stream Profiles." Website: <http://www.calrecycle.ca.gov/Profiles/>. Accessed November 21, 2011.
- California Department of Transportation. 2011. "California Scenic Highway System." Website: <http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm>. Accessed November 9.
- California Department of Transportation. 2011. Highway Design Manual.
- California Department of Transportation. 2004. Transportation- and Construction-Induced Vibration Guidance Manual. June.
- California Department of Transportation. 2002. Guide for the Preparation of Traffic Impact Studies.
- California Department of Transportation. 1998. Technical Noise Supplement. October.
- California Department of Water Resources. 2009. "California State Water Project Overview." Website: <http://www.water.ca.gov/swp/>.
- California Department of Water Resources. 2006. California's Groundwater Bulletin 118 - San Joaquin Valley Groundwater Basin, Delta-Mendota Subbasin. January 20.
- California Employment Development Department. 2012. Labor Force Data for Sub-County Areas - 2010 Benchmark.
- California Energy Commission. 2006. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. Staff Final Report. December.
- California State Water Quality Control Board. 2009. Order 2009-0009-DWQ Fact Sheet. September 2.

- California State Water Quality Control Board. 2007. 2006 Clean Water Act 303(d) List of Water Quality Limited Segments. Adopted June 28.
- California State Water Resources Control Board. 2012. Geotracker Database Query. Website: <http://geotracker.waterboards.ca.gov/default.asp>. Accessed April 13, 2012.
- City of Patterson. 2012. Water Supply Assessment. April 14.
- City of Patterson. 2011. Urban Water Management Plan, 2010 Update. May.
- City of Patterson. 2010. City of Patterson General Plan. November 30.
- City of Patterson. 2009. Patterson Municipal Code.
- City of Patterson. 2003. West Patterson Projects Final Environmental Impact Report. January.
- County of Stanislaus. 2011. Stanislaus County General Plan. Amended December 20.
- County of Stanislaus. 2004. Airport Land Use Commission Plan. May.
- Federal Emergency Management Agency. 2008. Effective Flood Insurance Rate Map, Map Number 06099C0734E.
- Institute of Transportation Engineers. 2008. Trip Generation, 8th Edition.
- Institute of Transportation Engineers. 2003. Trip Generation Handbook, 2nd Edition.
- Intergovernmental Panel on Climate Change. 2007. Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.
- Michael Brandman Associates. 2012. Air Quality Modeling Data. April.
- Michael Brandman Associates. 2012. Health Risk Assessment. April.
- Michael Brandman Associates. 2012. Noise Modeling Data. April.
- Michael Brandman Associates. 2011. Land Evaluation and Site Assessment Model. December 14.
- Office of Environmental Health Hazard Assessment. 2003. Air Toxics Hot Spots Program Risk Assessment Guidelines. The Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.
- Pacific Gas and Electric Company. 2011. 10-K Annual Report. February 17.

References

- San Joaquin Valley Air Pollution Control District. 2011. Ambient Air Quality Standards and Attainment Status. <http://www.valleyair.org/aqinfo/attainment.htm>. Accessed December 13, 2011.
- San Joaquin Valley Air Pollution Control District. 2009. Final Draft Staff Report: Addressing Greenhouse Gas Emissions Under the California Environmental Quality Act.
- San Joaquin Valley Air Pollution Control District. 2009. Guidance for Valley Land Use Agencies In Addressing Greenhouse Gas Emissions For New Project Under the California Environmental Quality Act.
- San Joaquin Valley Air Pollution Control District. 2008. “PM_{2.5} Plan.” Website: http://www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_PM25_2008.htm.
- San Joaquin Valley Air Pollution Control District. 2007. “Guidance for Air Dispersion Modeling Working Draft.” January 2007.
- San Joaquin Valley Air Pollution Control District. 2007. “Ozone Plan.” Website: http://www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_Ozone2007.htm.
- San Joaquin Valley Air Pollution Control District. 2002. Guide for Assessing and Mitigating Air Quality Impacts.
- Selby, Mark. Senior Electrical Engineering Technician, Turlock Irrigation District. Personal communication: letter. October 18, 2011.
- Sousa, Curt. Senior New Business Representative, Pacific Gas and Electric Company. Personal communication: letter. October 19, 2011.
- Stanislaus County Department of Agriculture. 2011. Stanislaus County Agricultural Crop Report 2010.
- Stanislaus Regional Transit. 2012. “Stanislaus Regional Transit System Map.” Website: http://www.srt.org/start_system_maps2.html. Accessed April 13, 2012.
- TJKM Transportation Consultants. 2012. West Patterson Business Park Expansion Traffic Study – Final Report. April 10.
- Transportation Research Board. 2000. Highway Capacity Manual 2000.
- United States Bureau of Reclamation. “Fact Sheet – Delta-Mendota Canal.” Website: http://www.calwater.ca.gov/Admin_Record/D-002042.pdf. Accessed December 7, 2009.
- United States Energy Information Administration. 2006. 2003 Commercial Buildings Energy Consumption Survey. December.
- United States Environmental Protection Agency. 2011. “Asbestos and Vermiculite.” Website: <http://www.epa.gov/asbestos/>. Accessed November 21.
- United States Environmental Protection Agency. 2011. “Health and Environmental Impacts of NOX.” Website: <http://www.epa.gov/air/urbanair/nox/hlth.html>. Accessed November 21.

- United States Environmental Protection Agency. 2011. "Health and Environmental Impacts of CO." Website: <http://www.epa.gov/air/urbanair/co/hlth.html>. Accessed November 21.
- United States Environmental Protection Agency. 2011. "Lead in Paint, Dust, and Soil." Website: <http://www.epa.gov/lead/index.html>. Accessed November 21.
- United States Environmental Protection Agency. 2011. "Polychlorinated Biphenyls (PCBs)." Website: <http://www.epa.gov/opptintr/pcb/>. Accessed November 21.
- United States Environmental Protection Agency. 2011. "Radon (Rn)." Website: <http://www.epa.gov/radon/>. Accessed November 21.
- United States Environmental Protection Agency. 2004. Direct HFC and PFC Emissions from Use of Refrigeration and Air Conditioning Equipment. October.
- United States Environmental Protection Agency. 2003. Particle Pollution and Your Health. September.
- United States Environmental Protection Agency. 1999. Ozone and Your Health.
- United States Environmental Protection Agency. 1998. Characterization of Building Related Construction and Demolition Debris in the United States. June.
- United States Environmental Protection Agency. 1997. Nitrogen Oxides: Impact on Public Health and the Environment.
- United States Environmental Protection Agency. 1996. AP-42 Fifth Edition, compilation of Air Pollutant Emission Factors Volume 1: Stationary Point and Area Sources, Supplement B. October.
- United States Geological Survey. 1978. Patterson, California 7.5 Minute Topographic Map.
- University of California, Davis. 1997. Transportation Project-Level Carbon Monoxide Protocol.
- Western Regional Climate Center. 2011. "Historical Climate Information." Website: <http://www.wrcc.dri.edu/CLIMATEDATA.html>. Accessed December 5, 2011.

