RECIRCULATED DRAFT ENVIRONMENTAL IMPACT REPORT

FOR THE

DELANO MARKETPLACE

SCH# 2005011089

VOLUME I OF III

PREPARED FOR:

CITY OF DELANO
Community Development Department
1015 11th Avenue
Delano, CA 93215

PREPARED BY:

PMC
PACIFIC MUNICIPAL CONSULTANTS

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PACIFIC MUNICIPAL CONSULTANTS
585 Cannery Row, Suite 304
Monterey, CA 93940
(831) 644-9174

APRIL 2007

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Landmark Surveying & Engineering. *Preliminary Drainage Study, Delano Marketplace No.1*. September 2, 2005.

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S - Executive Summary

This section of the Recirculated Draft Environmental Impact Report (RDEIR) provides a summary overview of the project environmental analysis, impacts and mitigation measures. For additional detail regarding specific issues, please consult the appropriate sub-section of **Section 3.0, Environmental Setting, Impacts, and Mitigation Measures**.

S.1 PROJECT OVERVIEW

The project applicant, Geary T. Coates and Delano Retail Center, LLC (hereinafter "project applicant") have submitted applications for conditional use permits; architecture and site plan review and a tentative parcel map to establish a precise development plan for a 456,022 square foot shopping center on a 45-acre site located at the southwest corner of Woollomes Avenue and Garzoli Avenue, near the intersection of State Route 99 and Woollomes Avenue in the City of Delano. **Section 2.7**, **Requested Actions and Required Approvals**, of this RDEIR lists the requested actions and required approvals for the proposed project.

The proposed project would include two large anchor stores, retail shops and restaurants (sit-down and fast-food). The large anchor stores would include a 228,751 square foot Wal-Mart Supercenter and a 172,463 square foot home improvement store. The Wal-Mart Supercenter store will include general merchandise sales; a garden center; tire and lube express; grocery sales and support space; stockroom/receiving area; ancillary areas; tenant areas (e.g. a fast-food restaurant and a vision center); a 14-position gas station on a separate pad; drive-thru pharmacy; and a bagged goods pick-up area. The Wal-Mart Supercenter will operate 24-hours per day. The proposed home improvement store will include general merchandise sales and a garden center. The proposed project includes nine other parcels for food and retail uses with proposed building sizes ranging from 2,500 to 14,410 square feet, for a total project size of 456,022 square feet.

S.2 PURPOSE AND SCOPE OF THE RDEIR

HISTORY OF THE EIR PROCESS

The City of Delano prepared and distributed a Draft EIR for the proposed project in April 2006. Upon completion of the Draft EIR the City filed a Notice of Completion (NOC) with the State Office of Planning and Research, in accordance with Section 15085 of the CEQA Guidelines. This began the 45-day public review period (Public Resources Code, Section 21161) for the Draft EIR, which ended on May 18, 2006. Following the end of the public review period, the City determined that significant new information existed and decided to address issues raised during the public review period by recirculating the Draft EIR pursuant to CEQA Guidelines Section 15088.5. Although the previous comments on the Draft EIR are part of administrative record, pursuant to the procedures set forth in CEQA

Guidelines Section 15088.5(f)(2), reviewers are requested to limit their comments to materials contained in this RDEIR.

SCOPE OF THE RDEIR

This RDEIR provides an analysis of the potential environmental effects associated with implementation of the Delano Marketplace project, hereinafter "proposed project", located in the City of Delano. The purpose of an EIR is to identify the significant effects on the environment of a project, to identify alternatives to the project and to indicate the manner in which those significant effects can be mitigated or avoided (CEQA Guidelines 21002.1(a)). The lead agency shall focus the discussion in the RDEIR on those potential effects on the environment resulting from a proposed project that the lead agency has determined may be significant. **Section 3.0**, **Environmental Setting, Impacts, and Mitigation Measures**, of the RDEIR focuses on impacts associated with: aesthetic and visual resources, agricultural resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, surface water hydrology and water quality, land use planning, noise, public services and facilities, traffic and circulation, and utilities and services.

Summary of Changes in the Recirculated Draft EIR

The following is a summary of the revisions to the EIR:

- ***Section 2.0, Project Description.*** The Project Description was revised to describe the following: an increase in the square footage of the proposed project to 456,022 square feet; describe energy efficient components of the project design; describe the proposed interim improvements to the Woollomes Avenue/State Route 99 interchange; describe the proposed improvements to the City's detention basin; and describe the requested approvals and responsible agencies.

- ***Section 3.1, Aesthetics and Visual Resources.*** The Aesthetics and Visual Resources Section of the RDEIR addresses secondary visual impacts associated with the proposed interim improvements at the Woollomes Avenue/State Route 99 interchange.

- ***Section 3.3, Air Quality.*** The Air Quality Section of the RDEIR incorporates new air quality modeling that was conducted to determine long-term emissions associated with the proposed project based on the increase in square footage and air quality modeling of short-term construction emissions to address construction activities at the project site, activities at the proposed interim Woollomes Avenue/State Route 99 interchange improvements, and expansion of the City's detention basin. In addition, the Hot Spot Analysis and Reporting Program (HARP) computer model was used, in coordination with the SJVAPCD, to calculate the chronic and acute

hazard indices and carcinogenic risk associated with the proposed project. The Air Quality Section of the RDEIR incorporates the air quality modeling in order to describe the short-term construction emissions, long-term operational emissions, exposure to toxic air contaminants, and local mobile source Carbon Monoxide emissions associated with the proposed project.

- ***Section 3.4, Biological Resources.*** The Biological Resources Section of the RDEIR includes additional surveys for San Joaquin Kit Fox and Burrowing Owl at the project site in August and September of 2006, as well as a subsequent survey of the proposed interim improvements at the Woollomes Avenue/State Route 99 interchange in November 2006.

- ***Section 3.5, Cultural Resources.*** The Cultural Resources Section was revised to incorporate an archaeological and historical investigation of the proposed interim improvements at the Woollomes Avenue/State Route 99 interchange.

- ***Section 3.7, Hazards and Hazardous Materials.*** The Hazards and Hazardous Materials section of the EIR was revised to incorporate findings from a subsequent Limited Phase II ESA conducted in September 2006, which analyzed soil samples at possible locations of a former underground storage tank and underground piping at the project site. Additional information was added to address the handling of hazardous materials associated with the proposed project, including the planned gas station and tire/lube service facility, which would involve the storage and handling of gasoline and other hazardous materials at the project site.

- ***Section 3.8, Surface Water Hydrology and Water Quality.*** The Surface Water Hydrology and Water Quality Section of the EIR was revised to incorporate findings from a Base Flood Elevation (BFE) study that was prepared for the proposed project in December 2006. The findings from the BFE study were incorporated into the RDEIR. This section was also revised to incorporate additional information regarding the proposed expansion of the City's detention basin to accommodate stormwater runoff from the proposed project.

- ***Section 3.9, Land Use and Planning***. The Land Use and Planning Section was revised to incorporate the findings from a revised economic impact study, which determined the potential for urban decay due to secondary economic impacts. The economic impact analysis was revised to include a retail vacancy inventory within the City of Delano, project future demand within the Delano market area based on projections of future housing absorption, and anticipated residential construction activity, as well as revise the cumulative analysis using the City's current cumulative project list.

- ***Section 3.10, Noise.*** Based on a new traffic impact analysis, updated noise modeling was conducted to address predicated traffic noise levels under Opening Year Project (2007) conditions, Near-term (2010), and Cumulative conditions (2030).

- ***Section 3.12, Traffic and Circulation***. A revised traffic impact analysis was prepared to address the interim improvements at the Woollomes Avenue/State Route 99 interchange, as well as an analysis of the proposed project under Existing Conditions, Opening Year (2007), Near-Term (2010); and Cumulative (2030) conditions. The RDEIR also incorporates an addendum to the traffic impact analysis that was prepared to address intersection queue lengths during railroad pre-emption events.

- ***Section 3.13, Utilities and Services***. Based on a recently adopted Urban Water Management Plan, the Utilities and Services Section of the EIR was revised to reflect updated information regarding groundwater, water supply, and distribution.

- ***Section 4.0, Alternatives to the Project.*** Clarification was provided in the RDEIR regarding alternatives that were considered by the City but rejected from further consideration. Additional clarification was also included in the RDEIR in the discussion of Alternative #2, Reduced Density Alternative.

- ***Section 5.0, Cumulative Impacts Summary***. The Cumulative Impacts Summary summarizes the City's most recent cumulative project list including past, present, and probable future projects producing related or cumulative impacts. Based on project conditions, assessment of the project's contribution to cumulative impacts presented in Section 3.0, Environmental Setting, Impacts, and Mitigation Measures is summarized within this section of the RDEIR.

- ***Section 6.0, Other Sections Required by CEQA.*** Information regarding the energy use of the proposed project was incorporated into sub-section "Irreversible Environmental Changes" of the RDEIR.

S.3 PROJECT ALTERNATIVES CONSIDERED

Two alternatives to the proposed project were considered: Alternative #1, No Project/No Development Alternative and Alternative #2, Reduced Density Alternative. CEQA Guidelines Section 15126.6(e)(2) requires that the environmentally superior alternative be identified. If the environmentally superior alternative is the "No Project/No Development Alternative," the EIR shall also identify an environmentally superior alternative among other alternatives. Based on the alternatives analysis contained within **Section 4.0**, **Alternatives to the Proposed Project**, the RDEIR concludes that Alternative #1, No Project/No

Development Alternative represents the environmentally superior alternative because most impacts would be reduced relative to the proposed project. However, the "No Project/No Development Alternative" does not meet any of the project objectives and is inconsistent with the *City of Delano General Plan* land use and zoning designation which designates the project site for commercial use. Therefore, Alternative #2, Reduced Density Alternative, would be the environmentally superior alternative and would result in a lesser degree of environmental impact as compared to the proposed project. This is primarily due to the reduced impacts related to traffic and associated reduction in noise and air quality impacts that would result from a reduced density alternative. However, this alternative would not meet the project objectives or the City's objectives to provide a commercial retail shopping center that serves the local and regional market, results in a net fiscal benefit to the City, reduces sales dollar leakage, and creates new jobs for the City of Delano, which currently has a high unemployment rate. **Table 4-1** in **Section 4.0, Alternatives to the Project** compares each considered alternative with the proposed project.

S.4 SUMMARY OF ENVIRONMENTAL IMPACTS

Table S-1 presents a summary of project impacts and proposed mitigation measures that would reduce, minimize, or avoid potential impacts. The level of significance of each environmental impact is indicated after the application of the recommended mitigation measure(s). For detailed discussions of all project impacts and mitigation measures, the reader is referred to topical environmental analysis in **Section 3.0** of this RDEIR.

TABLE S-1
EXECUTIVE SUMMARY OF PROJECT AND CUMULATIVE IMPACTS

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
Aesthetics and Visual Resources			
Impact 3.1-1. Development of the proposed project would result in the conversion of land from fallow agricultural land, rural residential and limited commercial uses to a regional shopping center. These changes would affect existing views to and from surrounding properties.	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact
Impact 3.1-2. The proposed project would alter the aesthetic character of the project site from vacant fallow agricultural land, rural residential and limited commercial uses to a regional shopping center.	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact
Impact 3.1-3. The proposed project would introduce new sources of lighting that could adversely affect adjacent properties.	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact
Impact 3.1-4. The project, combined with other similar projects in the area, may result in a cumulative aesthetic impact to the existing visual character of the project area.	Less Than Significant Cumulative Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Cumulative Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
Agricultural Resources			
Impact 3.2-1. The proposed project would convert approximately 45 acres of land designated as "Grazing Land" and "Other Land" in the *Important Farmlands Map of Kern County* to urban uses.	Less Than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact
Impact 3.2-2 The proposed project would convert approximately 45 acres of land designated as "Grazing Land" and "Other Land" in the *Important Farmlands Map of Kern County* to urban uses.	Less Than Significant Cumulative Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Cumulative Impact
Air Quality			
Impact 3.3-1. The proposed project does not include SJVAPCD-recommended measures for the control of particulate matter (PM) emissions for construction-related activities as required by Regulation VIII.	Potentially Significant Impact	**MM 3.3-1.** A Dust Control Plan (DCP) shall be prepared and submitted to the San Joaquin Valley Air Pollution Control District (SJVAPCD) prior to the start of demolition or construction activities. Construction activities shall not commence until the SJVAPCD has approved or conditionally approved the DCP. The DCP shall comply with SJVAPCD Regulation VIII, Fugitive PM_{10} Prohibitions. Copies of the SJVAPCD-approved DCP shall be provided to the City of Delano prior to beginning construction. Dust control measures to be included in the DCP shall include, but are not limited to, the following: ▪ All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant or vegetative ground cover. ▪ All on-site unpaved construction roads and off-site unpaved construction access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. ▪ All land clearing, grubbing, scraping, excavation, land	Less than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		leveling, grading, cut and fill and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. ▪ During demolition of buildings all exterior surfaces of the building shall be wetted. ▪ When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least 6 inches of freeboard space from the top of the container shall be maintained. ▪ All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.) ▪ Following the addition of materials to, or the removal of materials from, the surfaces of outdoor storage piles, piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. ▪ Onsite vehicle speeds on unpaved roads shall be limited to 15 mph. ▪ Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from adjacent project areas with a slope greater than 1 percent. ▪ Wheel washers shall be installed for all exiting trucks and equipment, or wheels shall be washed to remove accumulated dirt prior to leaving the site. ▪ Excavation and grading activities shall be suspended when winds exceed 20 mph. ▪ Visible dust emissions shall not exceed 20-percent opacity during periods when soil is being disturbed by equipment or	

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		by wind. Visible dust emissions opacity of 20 percent means dust that would obstruct an observer's view of an object by 20 percent. Dust control may be achieved by applying water before/during earthwork and onto unpaved traffic areas, phasing work to limit dust, and setting up wind fences to limit wind blown dust. In addition to the measures identified above, the following measures, including those identified in Table 6-3 of the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* shall be implemented: ▪ Install wind breaks at windward sides of construction areas. (This measure will be implemented if the City, in coordination the SJVAPCD, determines that the fugitive dust control measures described above are not sufficiently effective.) ▪ Comply with the NESHAPS during the renovation/demolition of any existing buildings on the project site with the potential to contain asbestos. ▪ Ground-disturbing activities (e.g., site grading) shall be limited to a maximum of 5 acres per day.	
Impact 3.3-2. Emissions of the ozone-precursor pollutant NO_x would exceed the SJVAPCD's corresponding significance thresholds of 10 tons/year.	Potentially Significant Impact	**MM 3.3-2.** The proposed project shall comply with SJVAPCD Indirect Source Review Rule (Rule 9510). In accordance with ISR Rule 9510, a detailed air impact assessment (AIA) shall be prepared detailing the specific construction requirements (i.e., equipment required, hours of use, etc.) and operational characteristics associated with proposed onsite and offsite improvements. In accordance with this rule, exhaust emissions for construction equipment greater than fifty (50) horsepower used or associated with the development project shall be reduced by the following minimum amounts from the statewide average as estimated by the ARB: (a) 20 percent of the total NO_x emissions and (b) 45 percent of the total PM_{10} exhaust emissions.	Less than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		Construction emissions may be reduced on-site by using less-polluting construction equipment, which can be achieved by utilizing add-on controls, cleaner fuels, or newer lower emitting equipment. Based on the findings of the AIA, the project applicant shall pay to the SJVAPCD a monetary sum necessary to offset the required construction emissions not reduced by incorporated emission reduction measures contained in the AIA. Any offset fees to be paid will be dependent on the findings of the AIA, to be calculated in accordance with the methodologies identified in the ISR Rule 9510 and approved by the SJVAPCD. To reduce short-term air quality impacts attributable to the proposed project, the following SJVAPCD-recommended measures included, but are not limited to: ▪ Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use at any one time; ▪ Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set); ▪ Curtail construction during periods of high ambient pollutant concentration. This may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways (or ceasing/reducing heavy-duty equipment usage on Spare the Air Days); ▪ On-site equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. Equipment maintenance records shall be kept on site and made available upon request by the SJVAPCD or City of Delano; ▪ When not in use, on-site equipment shall not be left idling; ▪ The project applicant shall comply with all applicable SJVAPCD rules and regulations. Copies of any applicable air quality permits and/or monitoring plans shall be provided to the City of Delano.	

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.3-3. Long-term generation of emissions attributable to the proposed project would exceed applicable SJVAPCD significance thresholds.	Significant Impact	**MM 3.3-3**. The proposed project shall comply with SJVAPCD Indirect Source Review (ISR) Rule 9510. In accordance with ISR Rule 9510, a detailed air impact assessment (AIA) shall be prepared detailing the specific construction requirements (i.e., equipment required, hours of use, etc.) and operational characteristics associated with proposed onsite and offsite improvements. In accordance with this rule, operational emissions of NO_x and PM_{10} shall be reduced by a minimum of 33.3 percent and 50 percent, respectively. Emission reductions are in comparison to the project's operational baseline (unmitigated) emissions calculated over a ten year period. Based on the findings of the AIA, the applicant shall pay to the SJVAPCD a monetary sum necessary to offset the required operational emissions not reduced by the incorporated emission reduction measures contained in the AIA. Any offset fees to be paid will be dependent on the findings of the AIA, to be calculated in accordance with the methodologies identified in the ISR Rule 9510 and approved by the SJVAPCD. Methods of reducing operational emissions include, but are not limited to, the following. (It should be noted that many of these measures are already included in the proposed project design or as mitigation listed in **Section 3.12**, **Traffic and Circulation**; however, they are repeated here to allow for a more complete listing of potential mitigation options commonly associated with such projects): ▪ If public transit services are available to the project site, transit enhancing infrastructure (e.g., transit shelters, benches, street lighting, route signs and displays, and/or bus turnouts/bulbs) shall be provided. ▪ Incorporate pedestrian/bicycle enhancing infrastructure that includes direct pedestrian connections (e.g., sidewalks) between land uses, trees to shade sidewalks and parking areas, street and parking lot lighting, designated bicycle parking areas and employee lockers.	Significant and Unavoidable Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		▪ Use solar, low-emission, central, or tankless water heaters; increase wall and attic insulation beyond Title 24 requirements. ▪ Develop and implement a program to encourage employers to promote carpooling and/or the use of low-emission vehicles, thus providing emission reductions. The program may include financial incentives, preferred parking, or other benefits for employees and businesses that use low-emission vehicles. ▪ Incorporate skylights into the building design to supplement and reduce the need for interior lighting within buildings. Day lighting systems should also be incorporated that automatically and continuously dims interior lights as the daylight contribution increases. (This measure has already been incorporated into the design of the proposed Wal-Mart Supercenter.) ▪ Use low-energy demand lighting or other energy-saving features (i.e., motion-sensors) for electronic displays and interior lighting, where practical. (This measure has already been incorporated into the design of the proposed Wal-Mart Supercenter.) ▪ During hours of non-operation, interior lighting should be dimmed to reduce energy demands. (This measure has already been incorporated into the design of the proposed Wal-Mart Supercenter.) ▪ Use white membrane roof coatings/materials to increase solar reflectivity and reduce interior building cooling demands. (This measure has already been incorporated into the design of the proposed Wal-Mart Supercenter.) ▪ Installation of energy-efficient lighting and appliances (e.g., "Energy Star" rated). (This measure has already been incorporated into the design of the proposed Wal-Mart Supercenter.)	

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		▪ The proposed home improvement store and Wal-Mart Supercenter shall use low-emission (e.g., model year 2004 or newer) or alternatively-fueled (e.g., natural gas) forklifts. ▪ Encourage commercial fleets to use newer lower-emission or alternatively fueled vehicles. For existing fleet vehicles, incentives are available through the ARB's Carl Moyer Memorial Air Quality Standards Attainment Program to assist in the conversion of in-use vehicles to cleaner-than-required engines. For older fleet vehicles, conversion to newer, cleaner technologies can reduce emissions by up to approximately 85 percent. The applicability and effectiveness of vehicle conversions is based on various factors, including existing vehicle fleet characteristics. ▪ The project applicant shall comply with all applicable SJVAPCD rules and regulations. Copies of any applicable air quality permits and/or monitoring plans shall be provided to the City of Delano. Incorporation of the above mitigation measures, including compliance with SJVAPCD ISR Rule 9510, would reduce regional emissions of NO_x and PM_{10} by approximately 33.3 percent and 50 percent, respectively, over a 10-year period. In accordance with ISR Rule 9510, offsets would be required to reduce unmitigated operational emissions associated with the proposed project to below SJVAPCD thresholds. The specific fees to be paid would be determined in consultation with the SJVAPCD and would be dependent on various factors, including the offset costs established by the SJVAPCD at the time of payment, as well as the specific emission-reduction measures incorporated into the proposed project, as identified in the AIA to be prepared for the proposed project. For instance, based on the URBEMIS modeling conducted as part of this EIR, the calculated pre-mitigation offset requirement would total approximately 125.5 tons of NO_x and 132.5 tons of PM_{10}, calculated over a period of 10 years in accordance with ISR	

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		Rule 9510. Assuming that offset fees were to be paid in full in 2007, the pre-mitigation offset fee would be $891,050 for NO_x and $741,205 for PM_{10}, based on year 2007 offset fee costs of $7,100/ton of NO_x and $5,594/ton of PM_{10}. Additional fees of approximately $65,200 would also be required to cover the administrative costs of the SJVAPCD. In total, the pre-mitigation offset fee for the proposed project would be approximately $1,697,545. As noted above, offset fees are partially dependent on the year during which the fee is paid and would increase in future years due to anticipated increases in offset costs. The incorporation of recommended emission-reduction measures, as noted above, would result in a reduction in the offset fees to be paid to the SJVAPCD. The specific measures to be implemented would be included in the required AIA, which is to be prepared in coordination with and approved by the SJVAPCD prior to project implementation. With the incorporation of emissions offsets, as required by ISR Rule 9510, near-term operational emissions attributable to the proposed project would be reduced to a less than significant level. However, given that operation of the proposed land uses would likely extend beyond the ten-year offset period required by ISR Rule 9510 and that the availability of sufficient offsets beyond the initial 10-year operational period is currently unknown, long-term increases in regional emissions, beyond the 10-year offset period, could exceed SJVAPCD significance thresholds.	
Impact 3.3-4. Commercial land uses proposed as part of the proposed project would have the potential to emit toxic air contaminants. The exposure of nearby sensitive receptors to project-generated toxic air contaminants (TAC) is not anticipated to exceed SJVAPCD significance thresholds.	Less Than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.3-5. Implementation of the proposed project would not result in the frequent exposure of nearby sensitive receptors to odorous emissions.	Less Than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact
Impact 3.3-6. Given the relatively low background CO concentrations in the project vicinity and that implementation of the proposed project would not result in unacceptable levels of service at nearby signalized intersections, localized concentrations of CO are not anticipated to exceed applicable ambient air quality standards.	Less Than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact
Impact 3.3-7. Project-generated emissions would contribute, on a cumulative basis, to existing and future regional nonattainment conditions within the SJVAB, as well as increases in greenhouse gas emissions.	Significant Cumulative Impact	Mitigation measures identified in Impact 3.3-3 would result in reductions in mobile-source pollutants of regional and local concern. With implementation of Mitigation Measure **MM 3.3-3**, the project's contribution to cumulative air quality impacts would be lessened, but not to a less than significant level (i.e., mitigated to levels below the SJVAPCD's recommended significant threshold of 10 tons/year for ROG and 10 tons/year for NO_X) for the extended life of the project. No additional feasible mitigation measures have been identified that would further reduce project-related impacts. In addition to increases in criteria air pollutants, the proposed project would also contribute to increases in greenhouse gas (GHG) emissions that are associated with global climate change. A large majority of the GHGs attributable to the proposed project would be comprised of carbon dioxide (CO_2) emissions generated by mobile sources. Additional emissions of GHGs would be associated with energy consumption. No emission thresholds have been established under federal, state or local laws for evaluation of the significance of increases of GHGs.	Significant and Unavoidable Cumulative Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.3-8. Project-generated emissions would contribute, on a cumulative basis, to localized increases in pollutant concentrations.	Significant Cumulative Impact	Mitigation measures **MM 3.3-3** would result in reductions in project-related mobile-source pollutants. However, on-road vehicles are regulated by ARB and, as a result, no additional mitigation measures have been identified that would reduce this impact to a less than significant level.	Significant and Unavoidable Cumulative Impact
Biological Resources			
Impact 3.4-1. Development of the proposed project would result in temporary disturbance and permanent alteration of site conditions that could support western burrowing owl.	Potentially Significant Impact	**MM 3.4-1**. The project applicant shall retain a qualified biologist approved by the City of Delano to complete mitigation established by the DFG to "avoid and minimize impacts to burrowing owls at a project site and preserve habitat that will support viable owl populations" (DFG 1995). The biologist shall complete pre-construction surveys of suitable burrowing owl habitat at the project site and within surrounding areas (up to 150 feet outside the project area) no more than 30 days prior to ground disturbance activities. If no burrowing owls are detected during the pre-construction surveys, no action is necessary. However, if burrowing owls are detected within the project area, the following shall apply (as outlined in DFG guidance): ▪ During the non-breeding season (September 1st through January 31st), no disturbance should occur within approximately 160-foot radius of an occupied burrow. During the nesting season (February 1st through August 31st), occupied burrows should not be disturbed within a 250-foot radius unless a qualified biologist approved by the DFG verifies through non- invasive methods that either: (1) the birds have not begun egg-laying and incubation or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival; ▪ The project applicant shall acquire and permanently protect, either through conservation easement or through an approved mitigation bank, a minimum of 6.5 acres (amount established by the DFG) of foraging habitat (calculated on an	Less than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		approximate 300-foot foraging radius around the burrow) per pair or unpaired resident bird to offset the loss of foraging and burrow habitat on the project site. The protected lands should be adjacent to occupied burrowing owl habitat and at a location acceptable to the DFG. Protection of additional habitat acreage per pair or unpaired resident bird may be applicable based on DFG guidance; ▪ When destruction of occupied burrows is unavoidable, existing unsuitable burrows should be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows per DFG design specifications) at a ratio of 2:1 on the protected lands site; ▪ If owls must be moved away from the disturbance area, passive relocation techniques (as outlined by the DFG [i.e., use of one-way doors]) should be used rather than trapping. At least one or more weeks will be necessary to accomplish this and allow the owls to acclimate to alternate burrows; ▪ The project applicant shall provide funding for long-term management and monitoring of the protected lands. The monitoring plan should include success criteria, remedial measures, and an annual report to the DFG.	
Impact 3.4-2. Development of the proposed project would result in temporary disturbance and permanent alteration of site conditions that could support San Joaquin kit fox.	Potentially Significant Impact	**MM 3.4-2.** The project applicant shall retain a qualified biologist approved by the City of Delano to ensure no incidental take of San Joaquin kit fox occurs during construction or through any project-related activity occurring onsite. Consequently, no more than 30 days prior to ground disturbance the biologist shall conduct a survey for San Joaquin kit fox within and in the vicinity of the project site to ensure take avoidance. Survey results shall be submitted to the USFWS and DFG for evaluation and comment prior to the onset of construction activities. The regulatory agencies (USFWS and DFG) may recommend project modifications or additional actions, such as biological	Less than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		monitoring, further avoidance measures, minimization, restoration, preservation, or compensation. Compensation for loss of habitat could include the acquisition and preservation of equivalent acreage of suitable San Joaquin kit fox habitat (minimum acreage loss-replacement ratio 1:1) at an approved mitigation bank. The project applicant shall implement actions recommended by the USFWS and DFG. Furthermore, minimum construction requirements as outlined in the USFWS Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (June 1999) shall be implemented by the biologist in coordination with the project applicant as follows: ▪ Restrict project-related vehicle traffic to established roads or other designated areas onsite. Vehicles should observe a 20-mile per hour speed limit in all project areas (except on paved pre-existing roads with an established speed limit). Off-road traffic outside of the designated project areas should be prohibited; ▪ Night-time construction should be prohibited; ▪ All excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, each shall be thoroughly inspected for trapped animals. If at any time a trapped or injured San Joaquin kit fox is discovered, the procedures described under subsection "n" must be followed; ▪ All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored onsite for one or more nights shall be thoroughly inspected for San Joaquin kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a San Joaquin kit fox	

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped; ▪ All food-related trash items, such as wrappers, cans, bottles, and food scraps, shall be disposed of in closed containers and removed at least once a week from the project site; ▪ No firearms shall be allowed on the project site; ▪ No pets (e.g., dogs, cats, etc.) shall be permitted onsite; ▪ Use of rodenticides and herbicides in project areas shall be prohibited. If rodent control must be conducted, zinc phosphide should be used because of a proven (and recognized by the USFWS) lower risk to kit fox; ▪ The biologist shall be the appointed contact source for any employee or contractor who might inadvertently kill or injure a San Joaquin kit fox or who finds a dead, injured, or entrapped animal. The biologist will be identified during the employee education program (see below). Furthermore, the biologist's name and telephone number shall be provided to the USFWS; ▪ An employee education program shall be instituted for all site personnel. The program will consist of a brief presentation by the biologist that includes a description of the San Joaquin kit fox and its habitat needs, a report of the occurrence of San Joaquin kit fox in the project area, an explanation of the status of the species and its protection under FESA and CESA, as well as a list of measures being taken to reduce impacts to the species during project implementation. A fact sheet conveying this information shall be prepared by the biologist and distributed to any personnel who may enter the project site; ▪ Upon completion of the proposed project, all areas subject to	

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		temporary ground disturbance, including storage and staging areas, temporary roads, pipeline corridors, etc. shall be re-contoured if necessary and revegetated to promote restoration of the area to pre-project conditions to the extent possible. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the USFWS, DFG, and revegetation experts; ▪ Should any San Joaquin kit fox be found trapped onsite, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS should be contacted for advice; ▪ Any onsite personnel who inadvertently kills or injures a San Joaquin kit fox (or witnesses such an occurrence) shall immediately report the incident to the biologist. Subsequently, the biologist shall contact the DFG immediately in the case of a dead, injured, or entrapped fox; and ▪ The biologist shall notify the USFWS and DFG in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project-related activities. Notification shall include the date, time, and location of the incident or of the finding of a dead or injured animal as well as any other pertinent information. The regulatory agencies (USFWS and DFG) may recommend additional project modifications, such as biological monitoring, further avoidance measures, minimization, restoration, preservation, or compensation. Compensation for loss of habitat could include the acquisition and preservation of equivalent acreage of suitable San Joaquin kit fox habitat (minimum acreage loss-replacement ratio 1:1) at an approved mitigation bank. The project applicant shall implement actions recommended by the USFWS and DFG.	

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.4-3. Implementation of the proposed project would result in temporary and direct disturbance to nesting raptors and migratory birds (excluding burrowing owl).	Potentially Significant Impact	**MM 3.4-3.** If proposed construction activities are planned to occur during the nesting seasons for local avian species (typically March 1st through August 31st), the project applicant shall retain a qualified biologist approved by the City of Delano to conduct a focused survey for active nests of raptors and migratory birds within and in the vicinity of (no less than 100-feet outside project boundaries, where possible) the construction area no more than 30 days prior to ground disturbance. If an active nest is located during preconstruction surveys, USFWS and/or DFG (as appropriate) shall be notified regarding the status of the nest. Furthermore, construction activities shall be restricted as necessary to avoid disturbance of the nest until it is abandoned and the consulting regulatory agency deems disturbance potential to be minimal. Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment at a minimum radius of 100-feet around the nest) or alteration of the construction schedule. If construction occurs during the non-breeding season (generally September 1st through February 28th), a policy of avoidance and passive relocation (allowing an animal to move out of harms way without any purposeful interference by humans) for any wildlife found onsite shall be implemented for the duration of the project. The appropriate regulatory agency (USFWS or DFG) shall be contacted regarding any species of wildlife refusing to passively relocate from the project area.	Less than Significant Impact
Impact 3.4-4. The proposed project, in addition to anticipated cumulative development in the project vicinity, may disturb special status species, critical habitats and wildlife movement throughout the region.	Potentially Significant Cumulative Impact	Implementation of Mitigation Measures **MM 3.4-1** through **MM 3.4-3** would reduce the overall contribution to cumulative biological resource impacts resulting from implementation of the proposed project.	Less than Significant Cumulative Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
Cultural Resources			
Impact 3.5-1. The project site does not contain any recorded or anticipated resources of archaeological, cultural, or pre-historic significance. However, site preparation and grading could disrupt undiscovered archaeological and cultural resources of importance under CEQA and/or eligible for listing on the California Register.	Potentially Significant Impact	**MM 3.5-1a**. Should any previously undisturbed cultural, historic, or archaeological resources be uncovered in the course of site preparation, clearing or grading activities, all operations within 25 feet of the discovery shall be halted until such time as a qualified professional archaeologist can be consulted to evaluate the find and recommend appropriate action. If the find is determined to be significant, appropriate mitigation measures shall be formulated and implemented by the City of Delano. **MM 3.5-1b**. In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of Kern County has determined whether the remains are subject to the coroner's authority. This is in accordance with Section 7050.5 of the California Health and Safety Code. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of identification. Pursuant to Section 5097.98 of the Public Resource Code, the Native American Heritage Commission will identify a "Native American Most Likely Descendent" to inspect the site and provide recommendations for the proper treatment of the remains and any associated grave goods.	Less than Significant Impact
Impact 3.5-2. Implementation of the proposed project demolished five private residences and associated structures (e.g. sheds, carports and garages) that were constructed over 45 years ago. Based on the archaeological and historic investigation completed for the proposed project, none of the buildings/structures	Less Than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
within the project site appear to meet the eligibility criteria for inclusion in the California Register of Historic Resources (CRHR) or for consideration as unique archaeological resources.			
Impact 3.5-3. Implementation of the proposed project, in combination with cumulative development activity in the region, would increase the potential to disturb or contribute to the loss of known and undiscovered cultural resources.	Potentially Significant Cumulative Impact	Implementation of Mitigation Measures **MM 3.5-1a** and **MM 3.5-1b** would ensure the project's contribution to this cumulative impact would be reduced to a less than significant level.	Less Than Significant Cumulative Impact
Geology and Soils			
Impact 3.6-1. Strong ground shaking from nearby active and potentially active faults during a major earthquake event could cause severe damage to structures at the project site.	Potentially Significant Impact	**MM 3.6-1.** Subject to review and approval by the City of Delano, all future development at the project site shall be designed in accordance with the requirements of the current edition of the California Building Code for Seismic Zone 3 and the recommendations contained within the *Geotechnical Engineering Feasibility Investigation* prepared by Twining Laboratories in May, 2005, including the following: ▪ Floor slabs may be supported on properly moisture conditioned engineered fill, which extends to the depth of engineered fill recommended for foundation excavation. Internal slabs-on-grade in areas where near surface, expansive clay soils are placed as fill below the building slabs should be underlain by at least 30 inches of non-expansive, granular engineered fill soils. For constructability purposes, it is recommended all slabs-on-grade be underlain by at least six inches of Class 2 aggregate base. ▪ Collapsible soils should be over-excavated and compacted as engineered fill from areas of the planned improvements to reduce the collapse potential of these soils. ▪ Over-excavation will be required to remove near surface,	Less Than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		loose, compressible soils, to remove loose soils as a result of demolition activities to a depth of at least 12 inches below subsurface improvements to be removed, and to remove undocumented fill soils. Over-excavation should be conducted to provide a uniform thickness of engineered fill below proposed structures. It is anticipated that the borrow pit area and flood control basin will need to be filled in during site preparation. In order to limit differential fill thickness below the proposed structures, engineered fill should not vary by more than one-foot in height across a horizontal distance of 10 feet. ▪ Preliminary evaluations indicate that footings should have a minimum depth of 18 inches (or 24 inches for two-story buildings) below rough pad grade or adjacent exterior grade, whichever is lower.	
Impact 3.6-2. There is a low, but not necessarily insignificant, potential for liquefaction at the project site, which could result in potential structural damage and associated human safety hazards.	Potentially Significant Impact	Implementation of Mitigation Measure **MM 3.6-1**, requiring the applicant design all future development in accordance with the requirements of the California Building Code and the recommendations contained within the *Geotechnical Engineering Feasibility Investigation* prepared by The Twining Laboratories (May 19, 2005) would ensure that the effects of liquefaction would be less than significant.	Less Than Significant Impact
Impact 3.6-3. Construction of the proposed project could result in potential structural damage and associated human safety hazards resulting from seismically-induced ground settlement.	Potentially Significant Impact	Implementation of Mitigation Measure **MM 3.6-1**, requiring the applicant design all future development in accordance with the requirements of the California Building Code and the recommendations contained within the *Geotechnical Engineering Feasibility Investigation* prepared by The Twining Laboratories (May 19, 2005) would ensure that the effects of seismically-induced ground settlement would be less than significant.	Less Than Significant Impact
Impact 3.6-4. The proposed project has the potential to result in short-term soil	Potentially Significant Impact	Implementation of Mitigation Measure **MM 3.8-2**, requiring the applicant obtain a General Permit for Stormwater Discharges Associated with Construction Activities, as required by the	Less Than Significant

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
erosion during construction activities.		National Pollution Discharge Elimination System (NPDES), including preparation and submittal of a Stormwater Pollution Prevention Plan (SWPPP) that specifies how the discharger will protect water quality during construction activities, would ensure that potential short-term soil erosion impacts generated during construction activities will be reduced to a **less than significant** level.	Impact
Impact 3.6-5. Soils present on-site exhibit high compressibility and high collapse potential, which could result in damage to structures.	Potentially Significant Impact	Implementation of Mitigation Measure **MM 3.6-1**, requiring the applicant design all future development in accordance with the requirements of the California Building Code and the recommendations contained within the *Geotechnical Engineering Feasibility Investigation* prepared by The Twining Laboratories (May 19, 2005) would ensure that the effects of soil compressibility and collapse potential would be less than significant.	Less Than Significant Impact
Impact 3.6-6. Placement of new structures at the project site could result in potential structural damage and associated human safety hazards resulting from expansive soils at the project site.	Potentially Significant Impact	Implementation of Mitigation Measure **MM 3.6-1**, requiring the applicant design all future development in accordance with the requirements of the California Building Code and the recommendations contained within the *Geotechnical Engineering Feasibility Investigation* prepared by The Twining Laboratories (May 19, 2005) would ensure that the effects of expansive soils would be **less than significant**.	Less Than Significant Impact
Impact 3.6-7. Soils on-site are moderately corrosive to buried metal objects and could result in damage to buried utilities.	Potentially Significant Cumulative Impact	**MM 3.6-7**. Subject to review and approval by the City of Delano, the project applicant shall utilize corrosion-resistant material in construction materials as specified in the *Geotechnical Engineering Feasibility Investigation* prepared by Twining Laboratories in May 2005. Buried metal objects would be protected by selecting materials resistant to mild corrosion per manufacturer's specifications.	Less Than Significant Impact
Hazards and Hazardous Materials			

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.7-1. Development of the proposed project may expose people, property or the environment to risks associated with soil contamination from hazardous and potentially hazardous material at the project site.	Less Than Significant	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact
Impact 3.7-2. Implementation of the proposed project may expose people or property to hazardous materials in connection with the historical use of septic tanks at the project site, which are considered a source of residual contamination.	Potentially Significant Impact	**MM 3.7-2**. The project applicant shall ensure that any septic systems that are identified or encountered during site preparation and grading activities are properly removed in accordance with state regulations and the requirements of the County of Kern.	Less than Significant Impact
Impact 3.7-3. There is a non-operational water well and a pipe of unknown origin located at the project site.	Potentially Significant Impact	**MM 3.7-3**. Prior to commencement of site clearing and general demolition activities, the project applicant shall abandon any irrigation supply water wells and piping that are not proposed for future use in accordance with local and state regulations, subject to review and approval by the City of Delano.	Less than Significant Impact
Impact 3.7-4. The proposed project includes a 14-position gas station and tire and lube services, which would involve potentially hazardous storage and handling of gasoline and other hazardous materials.	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact
Impact 3.7-5. The project site is located approximately one half mile west of the Delano Municipal Airport. The proposed project could expose people to excessive noise levels and safety hazards from aircraft operations in the vicinity of the	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
project site.			
Impact 3.7-6. Implementation of the proposed project in addition to cumulative development associated with buildout of the General Plan may result in cumulative hazardous risk impacts.	Less than Significant Cumulative Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Cumulative Impact
Surface Water Hydrology and Water Quality			
Impact 3.8-1. Development of the proposed stormwater drainage system may create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems.	Potentially Significant Impact	**MM 3.8-1.** Subject to review and approval by the City of Delano, the project applicant shall expand the City of Delano's existing off-site retention basin 700 feet by 15 feet by 12 feet deep from the easterly side of the retention basin to accommodate stormwater runoff generated by the proposed project prior approval of a grading permit. The soil excavated from the retention basin shall be used at the project site to raise the base flood elevation (BFE) by one foot above the BFE adopted by FEMA. The stormwater drainage plans and design calculations shall be subject to review and approval by the City of Delano.	Less than Significant Impact
Impact 3.8-2. Soil disturbance associated with site preparation, grading and construction activities resulting from the proposed project may cause soil erosion and sedimentation, and/or the release of other pollutants into adjacent waterways.	Potentially Significant Impact	**MM 3.8-2**. In accordance with RWQCB regulations, development resulting in grading or excavation that disturbs one acre or more shall require the applicant to obtain a General Permit for Stormwater Discharges Associated with Construction Activities, as required by the National Pollution Discharge Elimination System (NPDES). Coverage under this permit requires the applicant to file a Notice of Intent (NOI) with the State through the RWQCB and prepare a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must list Best Management Practices (BMP), which specify how the discharger will protect water quality during the course of construction. The SWPPP shall be consistent with RWQCB standards.	Less than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.8-3. The proposed project would generate urban non-point contaminants, which would be carried in stormwater runoff from the project site and ultimately affect groundwater quality.	Potentially Significant Impact	**MM 3.8-3**. The proposed project shall include the following post-construction Best Management Practices (BMPs) in order to reduce non-point source pollutant loads: ▪ The project applicant shall comply with all applicable federal, state and local laws and regulations during the operational phase of the project regarding non-point source discharges and obtain all necessary permits or approvals that may be required; ▪ Impervious surfaces such as roads, parking lots and driveways shall be routinely cleaned during both the "wet" and "dry" seasons to limit the accumulation of "first flush" contaminants; ▪ Engineered products, such as storm drain inlet filters, oil/water separators, etc., shall be utilized to capture pollutants before the stormwater runoff enters the storm drainage system; ▪ Storm drain inlets shall be labeled with the phrase "No dumping," or a similar phrase to discourage illegal discharges of pollutants to the storm drainage system; ▪ Common landscaped areas shall be subject to a program of efficient irrigation and proper maintenance including minimizing use of fertilizer, herbicides and pesticides; ▪ The project tenants and users shall implement a trash management and litter control program to mitigate the impacts of gross pollutants on stormwater quality. This program shall include litter patrol, emptying trash receptacles in common areas, and reporting and investigating trash disposal violations; ▪ Restaurants within the development shall be designed to include contained areas for cleaning mats, containers and sinks connected to the sanitary sewers. Grease shall be collected and stored in a contained area and shall be removed regularly by a disposal recycling service. To this	Less than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		end, sinks shall be equipped with grease traps to provide for its collection.	
Impact 3.8-4. According to the Flood Insurance Rate Map (FIRM) for the proposed project, the majority of the project site was designated as being within Zone A, which is considered an area where no detailed hydraulic analyses has been performed and no base flood elevation or depths have been determined. However, based on a Base Flood Elevation Study prepared for the proposed project, the Base Flood Elevation of the project site was determined to be 299.28 feet with a majority of the project site located within Zone C with a small portion of the southwest corner is located within Zone B.	Potentially Significant Impact	**MM 3.8-4**. Prior to recordation of a final map, or otherwise determined by the City of Delano, for onsite areas currently within Zone A, the project applicant is required to obtain a Letter of Map Revision (LOMR) from the Federal Emergency Management Agency (FEMA). The LOMR shall identify the area of the proposed development that has been removed from the "Zone A" FEMA designation and shall be submitted to the City of Delano for review. In addition, implementation of mitigation measure **MM 3.8-1** would ensure that stormwater generated on the project site is captured and conveyed to the City of Delano's stormwater retention basin to reduce the potential for on-site flooding.	Less Than Significant Impact
Impact 3.8-5. The proposed project in combination with future development in the area may cause a cumulative effect with regard to drainage and water quality.	Less Than Significant Cumulative Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Cumulative Impact
Land Use Planning			
Impact 3.9-1. The proposed project is consistent with the provisions of the *City of Delano General Plan* and Zoning Ordinance.	Less Than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact
Impact 3.9-2. The proposed project is located within the "Airport Influence Area" of the Delano Municipal Airport, as determined by the *Kern County Airport Land Use Compatibility Plan*.	Less Than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.9-3. The proposed project will not disrupt or divide an established community.	Less Than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact
Impact 3.9-4. Development of the proposed project could create land use compatibility conflicts with surrounding uses.	Less Than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact
Impact 3.9-5. Retail uses planned for the proposed project would compete with existing businesses in the City of Delano. This increased competition could potentially result in or contribute to closure of existing businesses in the City of Delano. However, the City of Delano currently has a very low vacancy rate and the City has several business retention and expansion programs in place. In addition, Chapters 7.32, Property Maintenance and Chapter 9.26, Graffiti of the City of Delano Municipal Code would ensure that properties are maintained if any buildings are vacated within the City limits. Therefore, the City of Delano has several programs which would ensure that secondary economic impacts associated with the proposed project would not result in urban decay.	Less Than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact
Impact 3.9-6. The proposed project, combined with other foreseeable projects in the City of Delano may result in the closure of businesses in the City of Delano. However, business retention and expansion	Less Than Significant Cumulative Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Cumulative Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
programs currently in place, as well as Chapter 7.32, Property Maintenance and Chapter 9.26, Graffiti of the City of Delano Municipal Code would ensure that urban decay due to secondary cumulative land use impacts would not occur.			
Noise			
Impact 3.10-1. Depending on the activities being performed, as well as the duration and hours during which activities occur, construction-generated noise levels at nearby residences could result in increased levels of annoyance and sleep disruption for occupants of nearby residences.	Potentially Significant Impact	**MM 3.10-1a**. During the course of construction, the City of Delano shall require that the project applicant limit construction activities to the least noise-sensitive daytime hours of 7 a.m. to 7 p.m. Construction activities shall not be allowed on Sundays and legal holidays. These limitations shall be specified in all construction contracts and specifications entered into by the project applicant and/or its successors in interest. **MM 3.10-1b**. During the course of construction, the City of Delano shall require that the project applicant ensure that all construction vehicles or equipment, fixed or mobile, are equipped with properly operating and maintained mufflers and acoustical shields or shrouds, in accordance with manufacturers' recommendations.	Less than Significant Impact
Impact 3.10-2. Increases in stationary-source noise associated with proposed land uses would not exceed applicable noise standards nor result in a substantial increase in average daily noise levels at nearby receptors.	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact
Impact 3.10-3. Implementation of the proposed project would not result in a substantial increase in ambient traffic noise levels.	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.10-4. Implementation of the proposed project could result in exposure to aircraft and railroad noise.	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less Than Significant Impact
Impact 3.10-5. Predicted noise levels at residential dwellings located along primarily affected roadways could potentially exceed the City's land use compatibility standards at nearby residential dwellings.	Significant Cumulative Impact	Sound walls are typically the preferred method of mitigating exterior noise levels at noise-sensitive receptors. However, given that access to receptors located along primarily affected roadways would need to be maintained and openings in the barrier would not effectively block noise, construction of acoustically effective sound walls would not be considered feasible. No additional feasible mitigation measures have been identified to reduce this impact to a less than significant level.	Significant and Unavoidable Cumulative Impact
Public Services and Facilities			
Impact 3.11-1. The proposed project will increase service demands for police patrol and incident response, but will not result in the need for new or physically altered governmental facilities.	Potentially Significant Impact	**MM 3.11-1**. The project applicant shall maintain on-site security personnel during all hours of operation.	Less than Significant Impact
Impact 3.11-2. The proposed project will increase the demand for fire protection services. However, the proposed project would not result in the need for new or physically altered governmental facilities.	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact
Impact 3.11-3. The proposed project will generate employment opportunities, which may attract additional residents with school-age children to Delano.	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact
Impact 3.11-4. The proposed project will generate employment opportunities, which may attract additional residents to Delano and result in additional demand	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
for parks and recreation facilities.			
Impact 3.11-5. The proposed project, in addition to anticipated cumulative development in the project vicinity, may result in the need for increased public services and facilities.	Less than Significant Cumulative Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Cumulative Impact
Traffic and Circulation			
Impact 3.12-1. Implementation of the proposed project would result in the generation of approximately 22,294 net weekday trips. These trips in addition to approximately 7,234 trips generated by approved projects anticipated to be completed by December 2007 (anticipated opening of the proposed project) would result in unacceptable levels of service during the AM, PM and/or Weekend peak hours at five intersections and five roadway segments.	Potentially Significant Impact	**MM 3.12-1a** Prior to occupancy of the proposed project, the project applicant shall construct the following improvements to the Woollomes Avenue and Dover Parkway intersection, subject to review and approval by the City of Delano: signalize and stripe the intersection to provide one dedicated left-turn lane with protected left-turn phasing, one dedicated right-turn lane, and one through lane on all four approaches. The intersection shall be designed and constructed wide enough to ultimately accommodate "Cumulative (2030) Project" conditions, which would includes: two left-turn lanes with protected left-turn phasing; and three through lanes. **MM 3.12-1b**. Prior to occupancy of the proposed project, the project applicant shall construct the following improvements to the Woollomes Avenue/Site Access intersection, subject to review and approval by the City of Delano: 1) signalize and stripe the intersection to allow left-turn phasing in eastbound and westbound directions; 2) two northbound left-turn lanes and two westbound left-turn lanes (approximately 350 feet long) in each direction on Woollomes Avenue; and 3) two through lanes in the eastbound and westbound directions. The intersection shall be designed and constructed wide enough to ultimately accommodate "Cumulative (2030) Project" conditions, which includes: two northbound left-turn lanes, two westbound left-turn lanes, and two eastbound left-turn lanes; three through lanes; and one eastbound right-turn lane and westbound right-turn	Less than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		lane. The final design of these improvements shall be coordinated with the State Route 99 improvements required in mitigation measures **MM 3.12-1c** and **MM 3.12-1d** and subject to review in the Project Study Report (PSR)/Project Report (PR). **MM 3.12-1c**. Prior to occupancy of the proposed project, the project applicant shall prepare a Project Study Report (PSR)/Project Report (PR), in accordance with Caltrans requirements for the Woollomes Avenue/State Route 99 interchange. The PSR/PR will evaluate interchange options under Opening Year (2007) Project conditions and Cumulative (2030) Project conditions. The PSR/PR shall include a conceptual configuration that has been accepted by Caltrans and shall identify a recommended alternative for reconstruction of the interchange in order to improve operations to an acceptable level of service. A conceptual Opening Year (2007) interim interchange configuration to mitigate opening year project impacts is illustrated in **Figure 3.12-4, Conceptual Interchange Improvements at Woollomes Avenue/State Route 99**. The PSR/PR shall include an analysis of the treatment of intersections along Woollomes Avenue at the Site Access, Garzoli Avenue, High Street, Lexington Street, and State Route 99 Southbound and Northbound ramps in order to improve operations to acceptable levels of service. The PSR/PR shall also address the adjacent railroad. The Opening Year (2007) interim interchange configuration analysis in the PSR shall include final design recommendations for the following conceptual design. ▪ **Woollomes Avenue/State Route 99 Ramps Intersections** - Relocate State Route 99 northbound on-ramp to the east, connecting from High Street; and State Route 99 southbound ramps to the west. Convert northbound High Street to a one-way roadway for northbound traffic only with southbound traffic on High Street redistributed to Lexington Street. • **Garzoli Avenue/Woollomes Avenue Intersection** - Garzoli	

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		Avenue would be disconnected from Woollomes Avenue and the southbound on-ramp. Construct a street connecting Garzoli Avenue to Dover Parkway south of the project site to allow northbound traffic on Garzoli Avenue to access Woollomes Avenue via Dover Parkway. In addition, Woollomes Avenue/Site Access intersection improvements included in mitigation measure MM 3.12-1b and Woollomes Avenue/Lexington Street intersection improvements included in mitigation measure MM 3.12-1f shall be included in the PSR/PR. The PSR/PR will be subject to the review and approval of Caltrans, the City of Delano, and the State of California Public Utilities Commission (PUC). **MM 3.12-1d**. Prior to occupancy of the proposed project, the project applicant shall construct the recommended improvements identified in the PSR/PR for the Woollomes Avenue intersections at Site Access, Garzoli Avenue, Lexington Street, and the State Route 99 northbound (including High Street) and southbound ramps subject to review and approval by Caltrans, the City of Delano, and the State of California Public Utilities Commission (PUC). Construction of the improvements shall be subject to a Caltrans encroachment permit and any permits required by the PUC or owner of the railroad right of way. Construction of the required improvements must be completed prior to operation of the proposed project. **MM 3.12-1e**. Prior to occupancy of the proposed project, the project applicant shall design and construct Woollomes Avenue to provide two through travel lanes in each direction and a median between Dover Parkway and the State Route 99 southbound ramps subject to review and approval by the city of Delano. The roadway segment along the frontage of the project site shall be designed and constructed wide enough to accommodate the ultimate "Cumulative (2030) Project" conditions, which would includes: three through lanes in each direction and a median. All	

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		traffic signals on Woollomes Avenue shall be coordinated. Communication conduit and cable or equivalent shall be installed to allow coordination of traffic signals. **MM 3.12-1f.** Prior to occupancy of the proposed project, the project applicant shall be responsible for construction of the following improvements to the Woollomes Avenue/Lexington Street intersection, subject to review and approval by the City of Delano: signalize and construct-the intersection to provide left-turn phasing; a dedicated left-turn lane for the northbound left-turn. The intersection shall be designed and constructed wide enough to ultimately accommodate "Cumulative (2030) Project" conditions, which includes: two eastbound left-turn lanes, and one northbound left-turn lane. The final design of this improvement shall be subject to review in the PSR/PR.	
Impact 3.12-2. Implementation of the proposed project would result in the generation of approximately 22,294 net weekday trips. These trips in addition to approximately 10,996 trips generated by approved projects anticipated to be completed in the near-term by the year 2010 would result in unacceptable levels of service during the AM, PM and/or Weekend peak hours at five intersections and five roadway segments.	Potentially Significant Impact	**MM 3.12-2**. Prior to occupancy of the proposed project, the City of Delano shall require that the project applicant provide one westbound right-turn lane at the Woollomes Avenue/Albany Street intersection, subject to review and approval by the City of Delano. In addition, implementation of mitigation measures **MM 3.12-1a**, **MM 3.12-1b, MM 3.12-1c,** and **MM 3.12-1f** would reduce impacts to a less than significant level.	Less than Significant Impact
Impact 3.12-3. Implementation of the proposed project would increase traffic volumes in the vicinity of a railroad crossing located approximately 60 feet east of the Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street)	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
intersection, which could result in lengthy queues that may block the railroad tracks, other nearby intersections, and extend traffic back up onto State Route 99 during a railroad pre-emption event.			
Impact 3.12-4. Buildout of the proposed project will result in a need for on-site parking facilities.	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact
Impact 3.12-5. The proposed project would create a demand for bicycle facilities, including bicycle lanes along the project frontage and on-site bicycle facilities (e.g., racks and lockers).	Potentially Significant Impact	**MM 3.12-5** Subject to review and approval by the City of Delano, the following bicycle facilities shall be incorporated into the proposed project and shown on final improvement plans: ▪ Class II bicycle lanes along the project street frontages. ▪ Bicycle racks and/or lockers to accommodate bicycle travel by customers and employees. Bicycle parking facilities should be located in high visibility areas in order to encourage bicycle travel and discourage theft and vandalism.	Less than Significant Impact
Impact 3.12-6. The proposed project would include a continuous sidewalk along Woollomes Avenue; however, the preliminary site plan does not indicate pedestrian crossing facilities at the main site access intersection with Woollomes Avenue, presenting a potential safety hazard to pedestrian circulation.	Potentially Significant Impact	**MM 3.12-6**. Subject to review and approval by the City of Delano, pedestrian crosswalks and traffic signals shall be provided at all four legs of the Woollomes Avenue/Site Access intersection. These improvements shall be incorporated into final improvement plans prior to approval by the City of Delano.	Less than Significant Impact
Impact 3.12-7. Due to demand generated by the proposed project, existing transit facilities may be inadequate to serve the project site.	Potentially Significant Impact	**MM 3.12-7.** The project applicant shall construct a new bus stop along the project frontage at a location approved by the City of Delano, including amenities such as a shelter and benches. The project applicant shall work with the City of Delano to extend transit service to the project site. These improvements shall be incorporated into final improvement plans.	Less than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.12-8. Implementation of the proposed project combined with approved and pending projects anticipated to be completed by the year 2030 would result in the cumulative generation of approximately 96,334 trips, which would result in unacceptable levels of service during the AM, PM and/or Weekend peak hours at all of the 14 study intersections and 11 study roadway segments.	Significant Cumulative Impact	**MM 3.12-8a**. The project applicant shall pay their proportionate fair share contribution towards the following improvements prior to occupancy of the proposed project. Fees applicable to the proposed project would include the applicable "per trip" traffic impact fees for the following improvements in accordance with the most recent City of Delano traffic impact fee program. Fees applicable to the proposed project would include the proposed "per trip" traffic impact fee of approximately $237 per vehicle trip and approximately $66.93 per trip for the proposed improvements to the Woollomes Avenue/State Route 99 interchange, which shall be paid to the City prior to occupancy of the proposed project. An update to the City of Delano Impact Fee Program is proposed for adoption by the City Council in May 2007. ▪ **Woollomes Avenue between Albany Street and Lexington Street**. Construct Woollomes Avenue to accommodate three through travel lanes in each direction. Coordinate all traffic signals on Woollomes Avenue between Albany Street and Lexington Street. ▪ **Woollomes Avenue/Albany Street Intersection**. Signalize and construct the intersection to provide two southbound left-turn lanes; protected left-turn phasing; and dedicated right-turn lanes. Any interim intersection improvements (i.e. **MM 3.12-2**) constructed by the project applicant that can be incorporated into the ultimate intersection configuration shall be credited against the fair share contribution of the traffic mitigation fees. ▪ **Woollomes Avenue/Dover Parkway Intersection**. Signalize and construct the intersection to accommodate two left-turn lanes and protected left-turn phasing on all four approaches; three through lanes; and one eastbound right-turn lane. ▪ **Woollomes Avenue/Site Access Intersection**. Signalize and construct the intersection to accommodate protected left-turn phasing in the eastbound and westbound directions; two	Significant and Unavoidable Cumulative Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		northbound left-turn lanes, two westbound left-turn lanes (350 feet), and two eastbound left-turn lanes (required if modification of the existing driveway on the north side of Woollomes Avenue is feasible); three through lanes; and one eastbound right-turn lane and westbound right-turn lane. Coordinate the traffic signals with the SR 99 ramp intersections. ▪ **Woollomes Avenue/Lexington Intersection**. Signalize and construct the intersection to accommodate protected left-turn phasing and a dedicated left-turn lane for the northbound left turn; and two eastbound left-turn lanes. ▪ **Schuster Road/Stradley Road Intersection**. Provide all-way stop sign control at the intersection of Schuster Road and Stradley Avenue. ▪ **Pond Road/Stradley Road Intersection** - Provide all-way stop sign control at the intersection of Pond Road and Stradley Avenue. ▪ **Schuster Road/Garzoli Avenue Intersection**. Signalize and reconfigure the intersection to provide protected left-turn phasing and a dedicated left-turn lane for the northbound left turn. ▪ **Pond Road/Garzoli Avenue Intersection**. Signalize and reconfigure the intersection to provide protected left-turn phasing and dedicated left-turn lanes; and two southbound left-turn lanes. ▪ **Pond Road/State Route 99 Southbound Ramps**. Signalize and reconfigure the intersection to provide protected left-turn phasing and dedicated left-turn lanes; and two eastbound left-turn lanes in accordance with Transportation Systems and Congestion Management Policy 7 of the *City of Delano General Plan*. ▪ **Pond Road/State Route 99 Northbound Ramps**. Signalize	

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
		and reconfigure the intersection to provide protected left-turn phasing and dedicated left-turn lanes; and two northbound left-turn lanes in accordance with Transportation Systems and Congestion Management Policy 7 of the *City of Delano General Plan*. No additional mitigation measures are feasible which would reduce this impact to a less than significant level.	
Impact 3.12-9. Implementation of the proposed project combined with approved and pending projects anticipated to be completed by the year 2030 would result in additional trips to the Woollomes Avenue/State Route 99 interchange, which is projected to operate at an unacceptable level of service.	Potentially Significant Cumulative Impact	**MM 3.12-8b**. The project applicant shall pay their proportionate fair share contribution towards the ultimate reconstruction of the Woollomes Avenue/State Route 99 interchange that is identified in the PSR/PR prepared as required by mitigation measure **MM 3.12-1c** prior to occupancy of the proposed project in accordance with the City of Delano's traffic mitigation fee program. Fees applicable to the proposed project would include the proposed "per trip" traffic impact fee of approximately $237 per vehicle trip and approximately $66.93 per trip for the proposed improvements to the Woollomes Avenue/State Route 99 interchange, which shall be paid to the City prior to occupancy of the proposed project. An update to the City of Delano Impact Fee Program is proposed for adoption by the City Council in May 2007. Contribution towards the ultimate interchange reconstruction shall be in accordance with Transportation Systems and Congestion Management Policy 7 of the City of Delano General Plan. Any interim improvements constructed by the project applicant that can be incorporated into the ultimate interchange configuration shall be credited against the fair share contribution of traffic impact fees that shall be determined in the PSR/PR.	Less than Significant Cumulative Impact
Utilities and Services			
Impact 3.13-1. The proposed project will increase the demand for potable water and require extension of the existing potable	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact

Potential Project Impact	Level of Significance w/o Mitigation	Mitigation Measure	Resulting Level of Significance
water delivery system located in Woollomes Avenue to the project site. However, the project site is included in the water service area estimates in the City of Delano Urban Water Management Plan; existing infrastructure can adequately supply the proposed project; and the increase in demand would not be substantial in relation to existing conditions.			
Impact 3.13-2. The proposed project will result in an increase in demand for sewer capacity at the City's wastewater treatment plant by 0.045 mgd and require extension of the existing wastewater system.	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact
Impact 3.13-3. The proposed project will generate approximately 6,107 pounds/day of solid waste.	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact
Impact 3.13-4. The proposed project will increase demand for electric, natural gas, telephone and cable services.	Less than Significant Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Impact
Impact 3.13-5. The proposed project, in addition to reasonably foreseeable projects in the vicinity, would likely result in the need for new or upgraded infrastructure for the delivery of water, sewer services, telecommunications, electricity and natural gas to the project area.	Less than Significant Cumulative Impact	No significant impact has been identified; therefore, no mitigation is proposed.	Less than Significant Cumulative Impact

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1.0 Introduction

This Recirculated Draft Environmental Impact Report (RDEIR) has been prepared by the City of Delano, as lead agency pursuant to applicable provisions in accordance with the California Environmental Quality Act (CEQA) and its implementing guidelines, the CEQA Guidelines. The purpose of the RDEIR is to evaluate the potential environmental effects associated with the development of the Delano Marketplace project (hereinafter "proposed project"), a 456,022 square foot regional shopping center located at the southwest corner of Woollomes Avenue and Garzoli Avenue, near the intersection of State Route 99 and Woollomes Avenue in the southwest portion of the City of Delano. The proposed shopping center would include two large anchor stores, retail shops, restaurants (sit-down and fast food) and a 14 fueling-position gas station. This section summarizes the purpose and intended uses of the EIR, the environmental procedures that are to be followed according to state and local law, and the EIR's scope and organization.

1.1 BACKGROUND AND PURPOSE

The City of Delano, hereinafter the "City," has prepared this RDEIR to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed project. As described in CEQA Guidelines Section 15121(a), an EIR is a public information document that assesses potential environmental effects of the proposed project and identifies mitigation measures and alternatives to the proposed project that could reduce or avoid adverse environmental impacts. Public agencies are charged with the duty to consider and minimize environmental impacts of proposed development where feasible, and have an obligation to balance a variety of public objectives, including environmental, economic and social factors.

The project applicant, Geary T. Coats and Delano Retail Center, LLC (hereinafter "project applicant") have submitted applications for conditional use permits, architecture and site plan review, and a tentative parcel map to establish a precise development plan for a 456,022 square foot shopping center on a 45-acre site located at the southwest corner of Woollomes Avenue and Garzoli Avenue, near the intersection of State Route 99 and Woollomes Avenue. **Section 2.7**, **Requested Actions and Required Approvals**, of this RDEIR lists the requested actions and required approvals for the proposed project.

CEQA requires the preparation of an EIR prior to approval of any "project" that may have a significant effect on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action, which has potential to result in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]). With respect to the proposed Delano Marketplace project, the City has determined the development of the property is a "project" within the definition of CEQA, which has the potential to result in significant environmental effects.

1.2 TYPE OF DOCUMENT

CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This RDEIR has been prepared as a "Project" EIR pursuant to CEQA Guidelines Section 15161. A "Project" EIR is the most common type of EIR and evaluates the environmental impacts of a specific development project. This EIR examines all phases of the project including planning, construction, and operation.

1.3 INTENDED USES OF THIS EIR

This EIR has been prepared in accordance with CEQA and is consistent with the most recent edition of the CEQA Guidelines and its updates. This document will be used by the City of Delano and any other responsible or reviewing agency as a first-tier document to identify and evaluate significant environmental issues at the project site. This analysis is based on the potential effects of the proposed project, as measured against the existing condition of the site and its surroundings. **Section 2.0**, **Project Description**, contains a detailed Project Description. Actions that would be taken relative to the project evaluated in this EIR are listed under subheading **2.7**, **Requested Actions and Required Approvals**.

1.4 ENVIRONMENTAL REVIEW PROCESS

The California Environmental Quality Act and the City of Delano encourage public participation in the planning and environmental review processes. Opportunities have been provided for the public to present comments and concerns regarding the project and the EIR document through a 45-day CEQA public review of the Draft EIR (hereinafter "DEIR"), which ended on May 18, 2006. With publication of this RDEIR an additional 45-day CEQA public review comment period will commence. In addition, there will be additional opportunities for public comment at the public hearings at the City of Delano City Council. The review and certification process for the EIR involves the following procedural steps:

NOTICE OF PREPARATION

In accordance with Section 15063 of the CEQA Guidelines, the City of Delano determined that an EIR would clearly be necessary for the project; therefore, no initial study was prepared. In accordance with Section 15082(a) of the CEQA Guidelines, the City prepared a Notice of Preparation (NOP) of an EIR in January 2005. The NOP is included in the Appendices. The NOP was circulated to the public, local, state and federal agencies, and other interested parties to solicit comments on the proposed project. Concerns raised in response to the NOP were considered during preparation of the EIR and are also included in the Appendices.

DRAFT EIR

A DEIR was prepared and distributed by the City of Delano in April 2006, which contained a description of the proposed project, description of the environmental setting, identification of project impacts and effects found not to be significant, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives. Upon completion of the DEIR the City filed a Notice of Completion (NOC) with the State Office of Planning and Research, in accordance with Section 15085 of the CEQA Guidelines. This began the 45-day public review period (Public Resources Code, Section 21161) for the DEIR, which ended on May 18, 2006.

RECIRCULATED DRAFT EIR (RDEIR)

In reviewing the comments on the DEIR, the City of Delano determined that significant new information existed and decided to address issues raised during the public review period by recirculating the Draft EIR. Pursuant to Section 15088.5 of the CEQA Guidelines, the document is titled "Recirculated Draft EIR" or "RDEIR." Revisions were made to the following sections of the Draft EIR and are incorporated herein:

- ***Section 2.0, Project Description.*** The Project Description was revised to describe the following: an increase in the square footage of the proposed project to 456,022 square feet; describe energy efficient components of the project design; describe the proposed interim improvements to the Woollomes Avenue/State Route 99 interchange; describe the proposed improvements to the City's detention basin; and describe the requested approvals and responsible agencies.

- ***Section 3.1, Aesthetics and Visual Resources.*** The Aesthetics and Visual Resources Section of the RDEIR addresses secondary visual impacts associated with the proposed interim improvements at the Woollomes Avenue/State Route 99 interchange.

- ***Section 3.3, Air Quality.*** The Air Quality Section of the RDEIR incorporates new air quality modeling that was conducted to determine long-term emissions associated with the proposed project based on the increase in square footage and air quality modeling of short-term construction emissions to address construction activities at the project site, activities at the proposed interim Woollomes Avenue/State Route 99 interchange improvements, and expansion of the City's detention basin. In addition, the Hot Spot Analysis and Reporting Program (HARP) computer model was used, in coordination with the SJVAPCD, to calculate the chronic and acute hazard indices and carcinogenic risk associated with the proposed project. The Air Quality Section of the RDEIR incorporates the air quality modeling in order to describe the short-term construction emissions, long-term operational emissions,

exposure to toxic air contaminants, and local mobile source Carbon Monoxide emissions associated with the proposed project.

- ***Section 3.4, Biological Resources.*** The Biological Resources Section of the RDEIR includes additional surveys for San Joaquin Kit Fox and Burrowing Owl at the project site in August and September of 2006, as well as a subsequent survey of the proposed interim improvements at the Woollomes Avenue/State Route 99 interchange in November 2006.

- ***Section 3.5, Cultural Resources.*** The Cultural Resources Section was revised to incorporate an archaeological and historical investigation of the proposed interim improvements at the Woollomes Avenue/State Route 99 interchange.

- ***Section 3.7, Hazards and Hazardous Materials.*** The Hazards and Hazardous Materials section of the EIR was revised to incorporate findings from a subsequent Limited Phase II ESA conducted in September 2006, which analyzed soil samples at possible locations of a former underground storage tank and underground piping at the project site. Additional information was added to address the handling of hazardous materials associated with the proposed project, including the planned gas station and tire/lube service facility, which would involve the storage and handling of gasoline and other hazardous materials at the project site.

- ***Section 3.8, Surface Water Hydrology and Water Quality.*** The Surface Water Hydrology and Water Quality Section of the EIR was revised to incorporate findings from a Base Flood Elevation (BFE) study that was prepared for the proposed project in December 2006. The findings from the BFE study were incorporated into the RDEIR. This section was also revised to incorporate additional information regarding the proposed expansion of the City's detention basin to accommodate stormwater runoff from the proposed project.

- ***Section 3.9, Land Use and Planning***. The Land Use and Planning Section was revised to incorporate the findings from a revised economic impact study, which determined the potential for urban decay due to secondary economic impacts. The economic impact analysis was revised to include a retail vacancy inventory within the City of Delano, project future demand within the Delano market area based on projections of future housing absorption, and anticipated residential construction activity, as well as revise the cumulative analysis using the City's current cumulative project list.

- ***Section 3.10, Noise.*** Based on a new traffic impact analysis, updated noise modeling was conducted to address predicated traffic noise levels under Opening Year Project (2007) conditions, Near-term (2010), and Cumulative conditions (2030).

- ***Section 3.12, Traffic and Circulation***. A revised traffic impact analysis was prepared to address the interim improvements at the Woollomes Avenue/State Route 99 interchange, as well as an analysis of the proposed project under Existing Conditions, Opening Year (2007), Near-Term (2010); and Cumulative (2030) conditions. The RDEIR also incorporates an addendum to the traffic impact analysis that was prepared to address intersection queue lengths during railroad pre-emption events.

- ***Section 3.13, Utilities and Services***. Based on a recently adopted Urban Water Management Plan, the Utilities and Services Section of the EIR was revised to reflect updated information regarding groundwater, water supply, and distribution.

- ***Section 4.0, Alternatives to the Project.*** Clarification was provided in the RDEIR regarding alternatives that were considered by the City but rejected from further consideration. Additional clarification was also included in the RDEIR in the discussion of Alternative #2, Reduced Density Alternative.

- ***Section 5.0, Cumulative Impacts Summary***. The Cumulative Impacts Summary summarizes the City's most recent cumulative project list including past, present, and probable future projects producing related or cumulative impacts. Based on project conditions, assessment of the project's contribution to cumulative impacts presented in Section 3.0, Environmental Setting, Impacts, and Mitigation Measures is summarized within this section of the RDEIR.

- ***Section 6.0, Other Sections Required by CEQA.*** Information regarding the energy use of the proposed project was incorporated into sub-section "Irreversible Environmental Changes" of the RDEIR.

Relationship to the Draft EIR

The entire EIR was recirculated in order to facilitate public review of the RDEIR for a period of 45-days. During this period, the general public, agencies, and organizations may submit written comments on the RDEIR to the City of Delano. Pursuant to the procedures set forth in CEQA Guidelines Section 15088.5(f)(2), reviewers are requested to limit their comments to materials contained in this RDEIR.

PUBLIC NOTICE/PUBLIC REVIEW

Concurrent with the NOC, the City will provide public notice of the availability (NOA) of the RDEIR for public review in accordance with CEQA Guidelines Section 15087(a) and 15088.5(d) to all those that submitted comments on the DEIR, to all organization and members of the public who were on the City's distribution list for the DEIR, and to any additional persons or organizations that have requested information about the EIR since

publication of the DEIR in April 2006. The review period for the RDEIR will be in this case will be 45 days. Notice of the time and location of the hearing will be published prior to the meeting.

All comments or questions regarding the RDEIR should be addressed to:

King Leonard, Interim Community Development Director
City of Delano
1015 11th Avenue
Delano, CA 93216
Phone: (661) 721-3340

RESPONSE TO COMMENTS/FINAL EIR

Following the close of the public review and comment period for the DREIR, the City will consider all comments received on the RDEIR, prepare responses, and prepare the Final EIR (FEIR). The FEIR will consist of the DEIR, RDEIR, comments received, response to comments on the RDEIR, and any text changes to the RDEIR.

CERTIFICATION OF THE EIR

If the City finds that the FEIR is "adequate and complete", the City may certify the FEIR. The rule of adequacy generally holds that the EIR can be certified if: 1) it shows a good faith effort at full disclosure of environmental information, and 2) provides sufficient analysis to allow decisions to be made regarding the project in contemplation of environmental considerations.

PROJECT CONSIDERATION

Upon review and consideration of the FEIR, the City may act upon the project. A decision to approve the project would be accompanied by written Findings in accordance with CEQA Guidelines Section 15091 and, if applicable, Section 15093 (Statement of Overriding Considerations).

MITIGATION MONITORING

The City of Delano must also adopt a Mitigation Monitoring and Reporting Program (MMRP) for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment (Public Resources Code Section 21081.6(a)). This program will be designed to ensure that these measures are carried out during project implementation. The specific reporting or monitoring program required by CEQA is not required to be included in the RDEIR. Throughout the EIR, however, mitigation measures have been clearly identified and presented in language that will facilitate establishment of a monitoring and reporting program. Any mitigation

measures adopted by the City as part of the certified FEIR will be considered as conditions for approval of the project and will be included in the Mitigation Monitoring and Reporting Program to ensure and verify compliance.

1.5 SCOPE AND ORGANIZATION

Sections 15122 through 15132 of the CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include: a description of the environmental setting; an environmental impact analysis; mitigation measures; alternatives; significant irreversible environmental changes; growth-inducing impacts and cumulative impacts.

The environmental issues addressed in the DEIR and RDEIR were established through the preparation of environmental documentation and supporting technical reports developed for the project, public agency responses to the Notice of Preparation and comments received. Based upon documentation, technical reports, NOP responses, agency consultation and review of the project application, the City has determined the scope for this EIR, which is organized in the following manner:

SECTION S - EXECUTIVE SUMMARY

This section summarizes the characteristics of the proposed project and provides a concise summary matrix of the project's environmental impacts, associated mitigation measures and project alternatives.

SECTION 1.0 - INTRODUCTION

This section provides an introduction and overview describing the intended use of the EIR and the review and certification process.

SECTION 2.0 - PROJECT DESCRIPTION

This section provides a detailed description of the proposed project, including intended objectives, background information and physical and technical characteristics of the project.

SECTION 3.0 - ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

This section contains an analysis of environmental topic areas to be addressed, as identified below. Each subsection contains a description of the existing setting of the project area, identifies project-related impacts and recommends mitigation measures where necessary.

The following major environmental topics shall be addressed in this section:

- ***3.1 Aesthetics and Visual Resources.*** The potential change in character as measured against the existing setting and visual conditions of the project area is discussed. Project visibility, scale, additional light and glare and community character are considered relative to the existing rural residential, limited commercial and fallow agricultural land existing on-site. Views of the project site, and secondary impacts associated with improvements at the State Route 99/Woollomes Avenue interchange, as seen from various roadways in the vicinity are discussed within this section of the RDEIR. The potential for urban decay or blight to result from implementation of the proposed project is discussed in **Section 3.9, Land Use Planning.**

- ***3.2 Agricultural Resources.*** This section describes the agricultural resources of the project site and the potential impacts of the possible conversion of farmland, conflicts with Williamson Act contracts and other changes that could result in conversion of adjacent farmland. The *Important Farmlands Map* for Kern County is referenced in this section.

- ***3.3 Air Quality.*** This section of the RDEIR addresses the requirements of the San Joaquin Valley Air Pollution Control District and analyzes local and regional air quality impacts associated with project implementation, including short-term impacts from grading and construction, long-term operational emissions from mobile and stationary sources and exposure to toxic air contaminants such as particulate exhaust emissions from diesel-fueled engines. This analysis is based on an air quality assessment prepared by AMBIENT Air Quality & Noise Consulting, which included a health risk assessment of diesel-truck emissions from delivery trucks. The RDEIR also incorporates the chronic and acute hazard indices and the carcinogenic risk for the proposed project as modeled by the San Joaquin Valley Air Pollution Control District.

- ***3.4 Biological Resources.*** Potential impacts upon biological resources in the affected area are analyzed based on a site reconnaissance of the project site conducted by PMC's staff biologist. The RDEIR incorporates results from protocol level surveys for Burrowing Owl and San Joaquin Kit Fox that were performed in August and September of 2006. This section emphasizes the potential degradation or elimination of important species and the impacts on listed, proposed and candidate threatened and endangered species.

- ***3.5 Cultural Resources.*** This section analyzes the presence or absence of potentially significant archaeological and historic resources and examines the results of a general sensitivity review based upon database searches, known resources in the area and site surveys of the project site and the adjacent right-of-way for the proposed secondary improvements to the State Route 99/Woollomes Avenue

interchange. This analysis is based upon an archaeological and historical investigation completed by PMC's cultural resources specialist.

- ***3.6 Geology and Soils.*** This section examines potential geologic and seismic hazards, as well as any engineering constraints and general soil suitability for the land uses proposed for the project site. The analysis is based on a geotechnical engineering feasibility investigation conducted by Twining Laboratories, Inc. The analysis includes engineering recommendations for any geologic hazards or soil constraints identified at the project site.

- ***3.7 Hazards and Hazardous Materials.*** The potential presence of hazardous materials and contaminated soil on the project site is discussed. The potential risk of these conditions in proximity to existing and proposed development and human activities is evaluated. The potential for on-site sources of contamination such as leaking hazardous waste containers, underground storage tanks and asbestos-containing building materials, among other things, is discussed within this section of the EIR. The analysis is based on the Phase I and Phase II Environmental Site Assessments prepared by The Twining Laboratories.

- ***3.8 Surface Water Hydrology and Water Quality.*** The impacts of the proposed project on hydrology, storm drainage and water quantity and quality are discussed. The analysis identifies existing drainage patterns and the planned storm drainage improvements. The analysis estimates the amount of storage that would be required to accommodate stormwater flows generated by the proposed project and secondary impacts associated with improvements at the State Route 99/Woollomes Avenue interchange. The basis of this analysis is the drainage calculations prepared by Landmark Surveying & Engineering. The RDEIR addresses the potential for flooding on the project site based on the determination of the base flood elevation (BFE) that was prepared for the project applicant and reviewed by City staff and PMC.

- ***3.9 Land Use Planning.*** This analysis in this section of the RDEIR focuses on project consistency with adopted plans and policies, including the *City of Delano General Plan* and other local planning documents. Potential impacts focus on compatibility of the proposed project with adopted environmental plans and policies, compatibility of future commercial areas with surrounding land uses and the conversion of land to urban uses. This section also considers the potential for urban decay or blight due to secondary economic impacts. This discussion is based on an Economic Impact Study prepared by Applied Development Economics (ADE), which was revised to incorporate more information for the RDEIR.

- ***3.10 Noise.*** Compatibility between the existing noise environment and anticipated noise levels generated by the project and cumulative noise from area roadways are

examined in this section. Short-term construction noise impacts associated with the proposed project are identified as well as long-term operational impacts, including noise from traffic along area roadways and stationary noise sources from uses typical of a regional shopping center. The noise analysis is based on a noise impact assessment prepared by AMBIENT Air Quality & Noise Consulting.

- ***3.11 Public Services and Facilities.*** This section of the RDEIR addresses the availability of existing public facilities and calculates demand generated by the project for additional facilities such as schools, parks, police and fire services. This section of the RDEIR also provides a general assessment of additional system requirements and physical improvements needed to serve the buildout demands of the project.

- ***3.12 Traffic and Circulation.*** This section examines potential impacts on the area roadway network, including roadway segments and intersections based on a Traffic Impact Study prepared by Peters Engineering Group for the City of Delano that was revised for the RDEIR. Site access, on-site circulation and parking are also addressed within this section.

- ***3.13 Utilities and Services.*** This section of the RDEIR provides a general assessment of additional utilities requirements and physical improvements needed to serve the proposed project upon buildout. The provision of potable water resources; wastewater treatment and disposal; natural gas and electric service; and solid waste are addressed in this section of the RDEIR. Impacts are assessed based upon increased demand and service availability.

SECTION 4.0 – ALTERNATIVES TO THE PROJECT

CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the project, which could feasibly attain the basic objectives of the project and avoid and/or lessen the environmental effects of the project. This alternatives analysis compares the proposed project and the selected alternatives. These alternatives include:

- ***Alternative 1 – No Project/No Development.*** CEQA Guidelines Section 15126.6(e)(3) requires that a "No Project" alternative be evaluated as part of an EIR, proceeding along one of two lines: the project site remaining in its existing undeveloped state or development of the project site under existing underlying land use designations. The "No Project" alternative considers the comparative environmental effects of not approving the proposed project, with the site remaining in its current condition.

- ***Alternative 2 – Reduced Density Alternative.*** The Reduced Density Alternative assumes a reduction in the overall project size to approximately 265,000 square

feet. A reduced commercial development would generate less vehicle trips to the project site, and subsequently result in a reduction in air quality emissions and reduced noise levels, in comparison to the proposed project. A reduced density alternative of this nature would be large enough to include a density similar to the following configurations: 1) Anchor Store #1 (Wal-Mart Supercenter), gas station, and approximately 37,000 square feet of addition retail, or 2) Anchor Store #2 (Home Improvement Superstore), gas station, and 92,537 square feet of retail space. For the purpose of environmental review under CEQA, this alternative assumes a reduced density configuration of Anchor Store #2 (Home Improvement Superstore), gas station, and 92,537 square feet of retail space since this land use configuration would result in 11,473 trips per day, which would be approximately 50 percent less than the proposed project. A substantial reduction in the number of vehicle trips per day would result in a subsequent reduction in the air quality emissions and incremental increases in noise levels associated with the proposed project. This alternative assumes that the remainder of the project site would be landscaped.

SECTION 5.0 – CUMULATIVE IMPACT SUMMARY

This section evaluates the cumulative impacts generated by a list of past, present and reasonably foreseeable future projects in proximity to the project area, as identified by the City of Delano, along with various technical analyses. This information is coordinated with the traffic analysis to ensure that it is consistent with cumulative growth.

SECTION 6.0 – OTHER SECTIONS REQUIRED BY CEQA

This section contains required discussions and analyses of various topical issues mandated by CEQA Guidelines Section 15126.2, including: significant and unavoidable environmental effects; growth inducing impacts; irreversible environmental changes and effects found not to be significant.

SECTION 7.0 - REPORT PREPARERS AND REFERENCES

The purpose of this section is to provide a list of all authors and agencies that assisted in the preparation of the report by name, title, and company or agency affiliation. It also itemizes supporting and reference data used in the preparation of the EIR and lists all governmental agencies, organizations, and other individuals consulted in preparing the EIR.

APPENDICES

This section includes all notices and other procedural documents pertinent to the EIR, as well as all technical reports prepared in support of the analysis.

1.6 IMPACT TERMINOLOGY

This RDEIR uses the following terminology to describe environmental effects of the proposed project:

- ***Standards of Significance.*** A set of criteria used by the lead agency to determine at what level, or "threshold", an impact would be considered significant. Significance criteria used in this EIR include the CEQA Guidelines and Statutes; factual or scientific information; regulatory performance standards of local, state, and federal agencies; and policies of the *City of Delano General Plan*.

- ***Less Than Significant Impact.*** A less than significant impact would cause no substantial change in the environment and no mitigation is required.

- ***Potentially Significant Impact.*** A potentially significant impact may cause a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of project effects using specified standards of significance. Mitigation measures and/or project alternatives are identified to reduce project effects to the environment.

- ***Significant Unavoidable Impact.*** A significant and unavoidable impact would result in a substantial change in the environment for which no feasible mitigation is available to reduce the impact to a less than significant level, although mitigation may be available to lessen the degree of the impact.

- ***Cumulative Impact.*** Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

2.0 Project Description

2.1 OVERVIEW OF THE PROJECT

The project applicant, Geary T. Coats and Delano Retail Center, LLC (hereinafter "project applicant") has applied to the City of Delano to develop a 456,022 square foot regional shopping center on an approximately 45-acre site located at the southwest corner of Woollomes Avenue and Garzoli Avenue, near the intersection of State Route 99 and Woollomes Avenue.

The project applicant submitted a conditional use permit and tentative parcel map to establish a precise development plan for a regional shopping center. The proposed tentative parcel map creates eleven new parcels from eight existing parcels. The proposed project would include two large anchor stores, retail shops and restaurants (sit-down and fast-food). The large anchor stores would include a 228,751 square foot Wal-Mart Supercenter and a 172,463 square foot home improvement store.

The Wal-Mart Supercenter will offer groceries and general retail merchandise including, but not limited to, alcohol for off-site consumption, pool chemicals, petroleum products, pesticides, paint products, firearms, and ammunition. The Wal-Mart Supercenter will include a pharmacy with two drive-thru lanes; a vision and hearing care center; food service; a photo studio and photo finishing center; a banking center; an arcade; a tire and lube facility; outdoor seasonal sales and storage; a garden center with an exterior customer pick-up facility for pre-paid bagged garden supplies; and a 14 fueling-position gas station on a separate pad. The exterior pick-up facility will have a customer service attendant and will not accommodate direct sales. All supplies picked up from the exterior pick-up facility will be pre-paid. The Wal-Mart Supercenter will operate 24-hours per day, except for the tire and lube facility. The exterior pick-up facility will operate the same hours as the garden center.

The proposed home improvement store will include general merchandise sales and a garden center. The proposed project includes nine other parcels for food and retail uses with proposed building sizes ranging from 2,500 to 14,410 square feet.

Numerous technical studies have been completed to evaluate the potential environmental effects that may result from implementation of the proposed project. These studies include evaluations of air quality, archaeological and historic resources, biological resources, hydrology, traffic and circulation, hazardous materials, urban decay, and noise.

2.2 REGIONAL LOCATION

The project site is located in the City of Delano, in northern Kern County. The City of Delano is located along State Route 99, approximately thirty miles northwest of the City of Bakersfield and seventy-eight miles southeast of the City of Fresno. The City of Delano is located in the southern portion of California's agriculturally rich San Joaquin Valley, ten

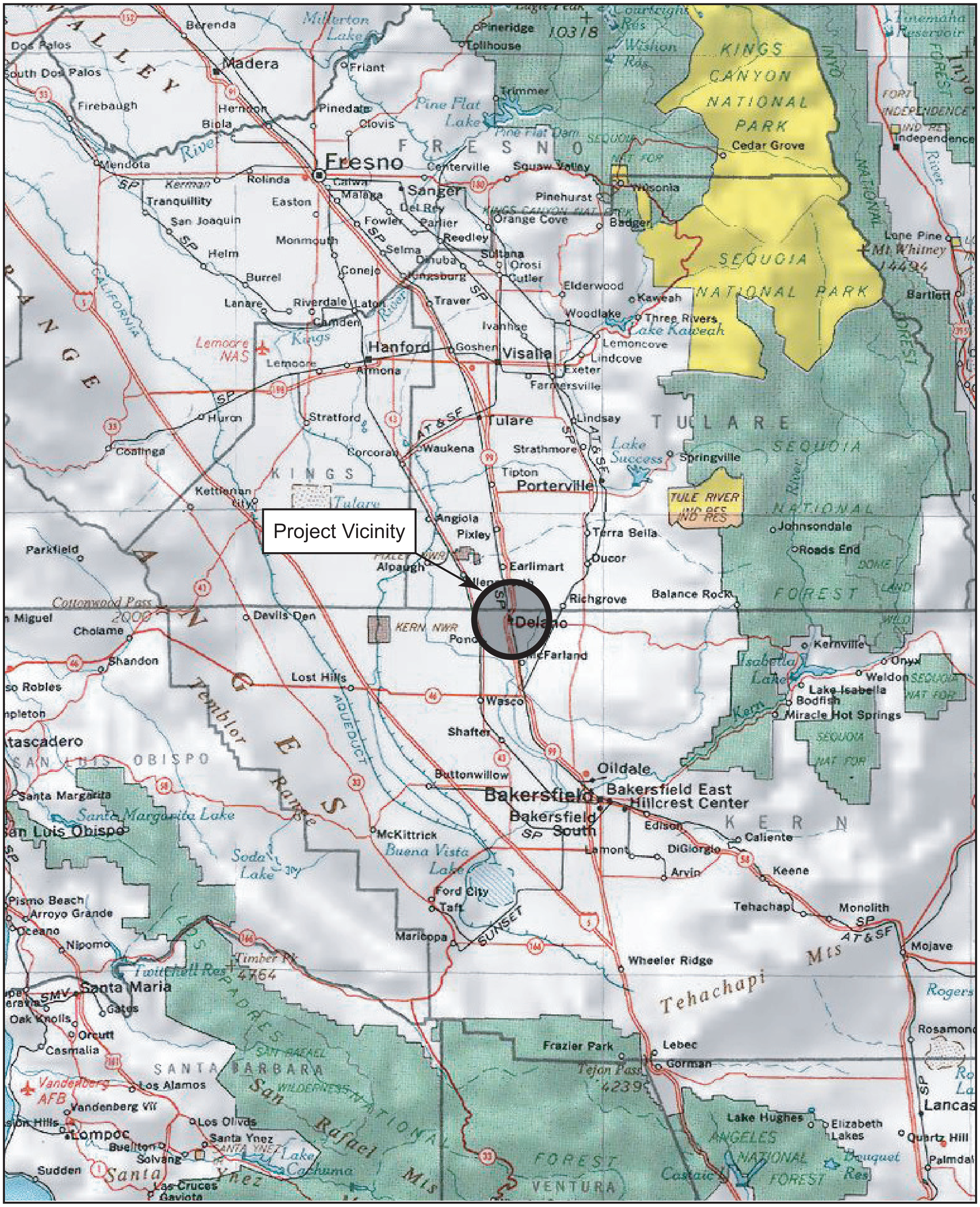
miles from the western foothills of the Sierra Nevada Mountains and approximately twenty-five miles from the Coast Range to the west. The regional location is shown in **Figure 2-1**, **Regional Location**.

2.3 PROJECT SITE AND IMMEDIATE VICINITY

The project site is approximately 45 acres in size and is comprised of eight parcels, assessor's parcel numbers (APN) 521-05-01, -02, -03, -04, -05, -08, -09 and -10 located at the southwest corner of Woollomes Avenue and Garzoli Avenue, near the intersection of State Route 99 and Woollomes Avenue. The project site is relatively level with an elevation of approximately 300 feet above mean sea level and slopes gently to the southwest. The project vicinity is illustrated in **Figure 2-2**, **Project Vicinity**, and an APN map, which shows the existing parcels, is shown in **Figure 2-3**, **Assessor's Parcel Map**.

The majority of the project site is designated as "Commercial" in the *City of Delano General Plan* (2005). The northeast corner is designated as "Service Commercial" and the southeast corner as "Industrial." The majority of the site is zoned "CRC" (Community Retail Commercial) with a small portion zoned as "GC" (General Commercial) in the northeast corner, adjacent to the intersection of Woollomes Avenue and Garzoli Avenue. The project site is also located within the City's Redevelopment Zone.

At the time of the site reconnaissance in January 2005, the historic uses at the project site consisted primarily of fallow agricultural land with the following improvements: five single family homes located along Woollomes Avenue on APN 521-05-01; a pallet company located on the southern portion of APN 521-05-02; a vacant commercial structure that was formerly a wrecking yard and a depressed area that is approximately 300 feet by 200 feet and five feet deep that appears to be associated with soil borrowing located within APN 521-05-05; a two-story motel and paved parking lot located on APN 521-05-08; a rectangular flood control basin of approximately 5,000 square feet located on APN 521-05-09 and a wooden pallet repair and storage company located on APN 521-05-10. According to the project applicant, all structures have been demolished or are in the process of being demolished (Personal Communication with Geary Coates on February 8, 2006). Demolition permits were obtained from the City of Delano prior to demolition and waste materials were disposed of following all local, state and federal regulations.



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Project Location, May 2005

FIGURE 2-1

REGIONAL LOCATION

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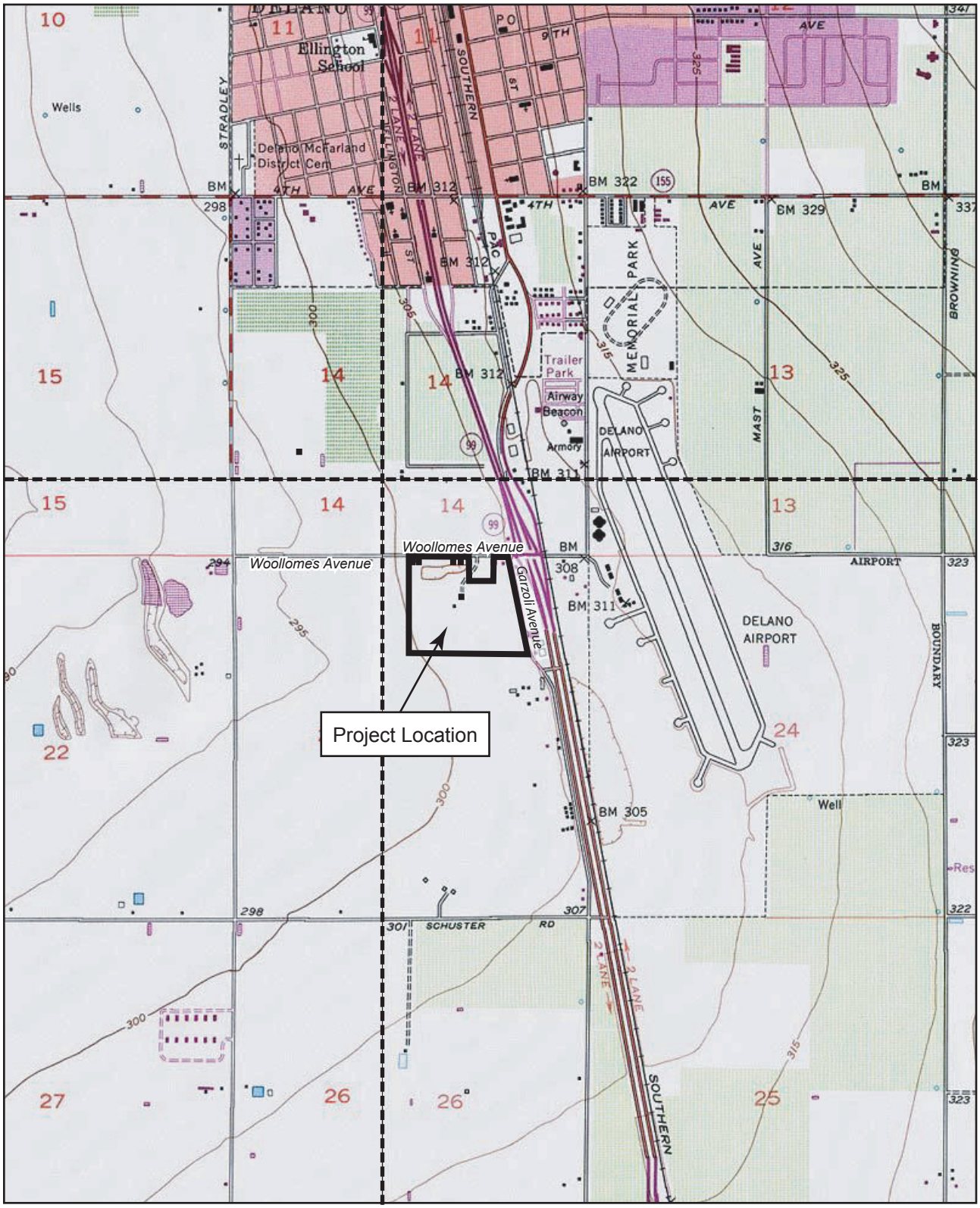

Source: National Geographic TOPO!; Bakersfield CD; 2000

Project Vicinity, May 2005

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FIGURE 2-2
PROJECT VICINITY

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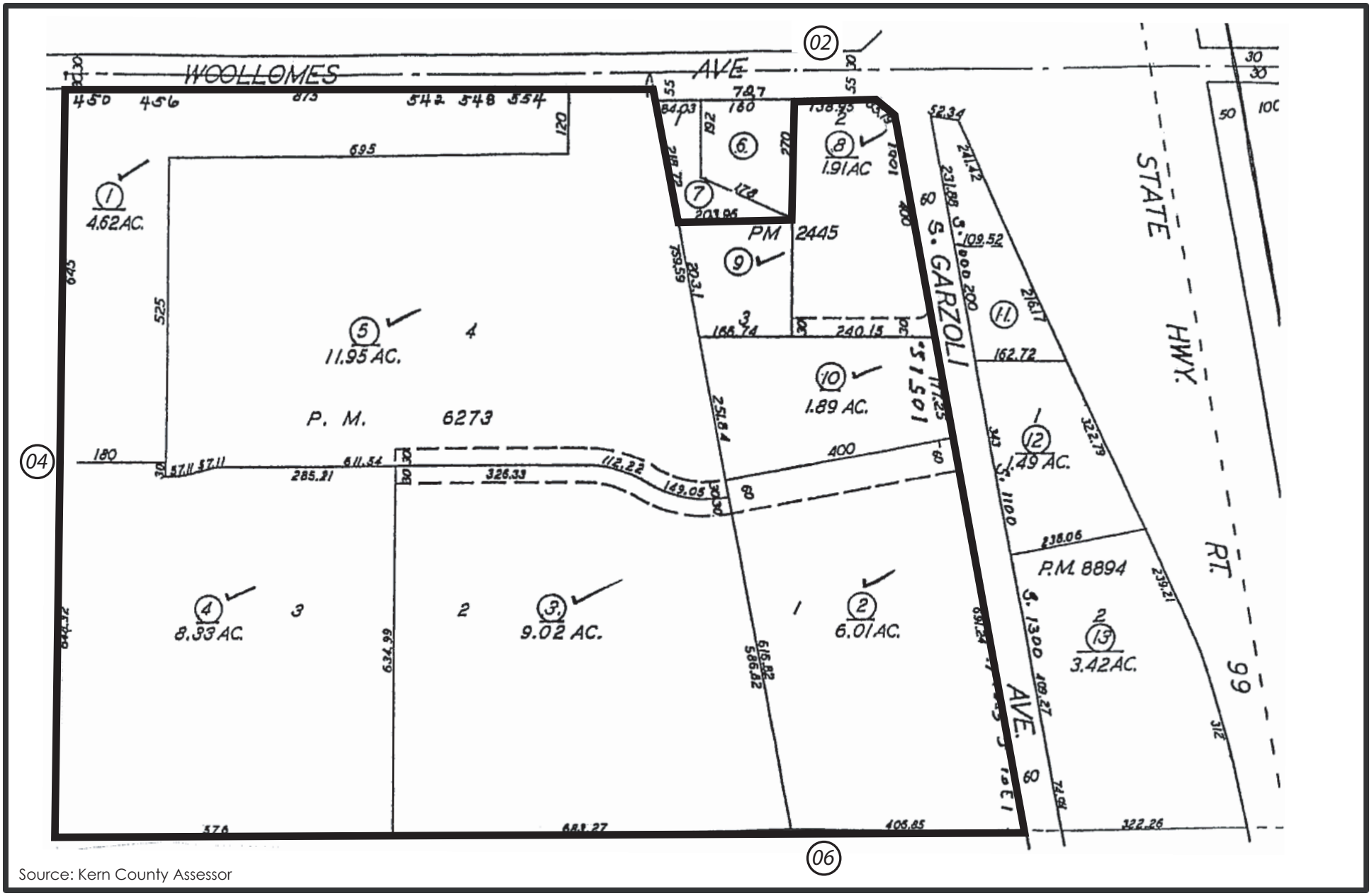

Source: Kern County Assessor

Assessor's Parcel Map, May 2005

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FIGURE 2-3
ASSESSOR'S PARCEL MAP

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Figures 2-4 through **2-6**, **Site Photos**, show photographs that depict conditions at the project site at the time of the site reconnaissance in January 2005. **Table 2-1, Summary of Historic Site Uses and Improvements** summarizes the ownership, size, current uses, and improvements on each parcel prior to demolition of the structures in early 2006.

TABLE 2-1
SUMMARY OF HISTORIC SITE USES AND IMPROVEMENTS

Parcel #	APN	Size (acres)	Current Use	Improvements
1	521-050-01	4.62	Rural residential uses and fallow agricultural land	Five single-family residences; non-operational water well
2	521-050-02	6.01	Pallet company and fallow agricultural land	Office building; two storage buildings; restroom; pole barn; concrete slab work area
3	521-050-03	9.02	Fallow agricultural land	None
4	521-050-04	8.33	Fallow agricultural land	None
5	521-050-05	11.95	Vacant wrecking yard and fallow agricultural land	Vacant building with carport; vacant concrete foundation; power pole; subsurface concrete vault
8	521-050-08	1.91	Motel	Two-story motel w/ parking lot
9	521-050-09	0.77	Fallow agricultural land	5,000 square foot flood control basin
10	521-050-10	1.89	Pallet repair and storage company	No permanent structures or improvements

Note: The City of Delano approved demolition permits and all structures were demolished in early 2006.

SURROUNDING LAND USES

The project site is located on the southwestern edge of the Delano City limits. Adjacent land uses include a Home Depot home improvement store located across Woollomes Avenue north of the project site; commercial properties, including an auto and truck stop and a tractor sales and service company (located between Garzoli Avenue and State Route 99) located east of the project site; and fallow agricultural land located south and west of the project site within the City's Sphere of Influence. The agricultural land to the west is designated as "Commercial" in the *City of Delano General Plan* while agricultural land to the south is designated as "Industrial." The project site partially surrounds the Pioneer Restaurant, located near the northeast corner of the project site, however, the restaurant is not part of the project site. Surrounding land uses are shown in the aerial photograph in **Figure 2-7**, **Surrounding Land Uses**.

2.4 Project Relationship to Existing Planning Documents

The majority of the project site is designated as "Commercial" in the *City of Delano General Plan* (2005). The northeast corner is designated as "Service Commercial" and the southeast corner as "Industrial." The majority of the site is zoned "CRC" (Community Retail Commercial) with a small portion zoned as "GC" (General Commercial) in the northeast corner, adjacent to the intersection of Woollomes Avenue and Garzoli Avenue.

According to the *City of Delano General Plan*, "Commercial" uses of 10-acres or larger should be located along major traffic ways in consolidated centers that utilize common access and parking. The primary purpose of the "Service Commercial" district is to provide sites for commercial uses that will serve a large segment of the population with a wide variety of retail and service uses. An analysis of the proposed project compared to existing plans and policies is contained within each of the technical sections in **Section 3.0**, **Environmental Setting, Impacts, and Mitigation Measures** and in **Section 3.9**, **Land Use Planning** of this EIR.

Adjacent properties to the north, which include a recently constructed Home Depot store, are designated as "Commercial" and zoned "GC" (General Commercial). Areas to the east are designated and zoned a combination of "Service Commercial" and "Industrial" and include such uses as the Pioneer Auto and Truck Stop. Areas bordering the project site on the south and west are in agricultural use and are located outside the Delano City limits, in the City's Sphere of Influence. Land to the south are zoned as "A" (Exclusive Agriculture) by Kern County and have been designated as "Industrial" by the *City of Delano General Plan*. Farmland to the west is also zoned "A" by Kern County and are designated as "Commercial" by the City of Delano.

2.5 PROJECT OBJECTIVES

Consistent with CEQA Guidelines Section 15124(b), a clear statement of objectives and the underlying purpose of the project shall be discussed. The following is a statement of the project objectives based on information provided by the project applicant:

- To provide a retail development that meets the current unmet demand for goods and services from consumers residing in the trade area for the City of Delano and from future residential developments;
- To provide a commercial retail shopping center that serves both the local and regional market area to attract new customers and retailers into the City of Delano;
- To provide a commercial development that results in a net fiscal benefit to the City of Delano by generating new sales tax revenue from Delano residents as well as non-residents attracted to the shopping center, and by increasing property tax revenues;

View of the Pioneer Motel & Restaurant in the northern portion of the project site.

View of single family homes along Woollomes Avenue in the northwestern portion of the project site.

T:\Delano Plaza \Graphic Development \Illustrator Files\Figure 2-4.ai, September 2005

Structures have been demolished since PMC's site reconnaissance in January 2005.

FIGURE 2-4
SITE PHOTOS

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View of the southeastern portion of the project site along Garzoli Avenue.

View of the central portion of the project site looking north from Parcel 5.

T:\Delano Plaza \ Graphic Development \ Illustrator Files \ Figure 2-5.ai, September 2005

Structures have been demolished since PMC's site reconnaissance in January 2005.

FIGURE 2-5
SITE PHOTOS

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View of Parcel 5 with Abandoned Building in the central portion of the project site.

View of the Flood Control Basin in the northeastern portion of the project site.

T:\Delano Plaza \Graphic Development \Illustrator Files\Figure 2-6.ai, September 2005

Structures have been demolished since PMC's site reconnaissance in January 2005.

FIGURE 2-6
SITE PHOTOS

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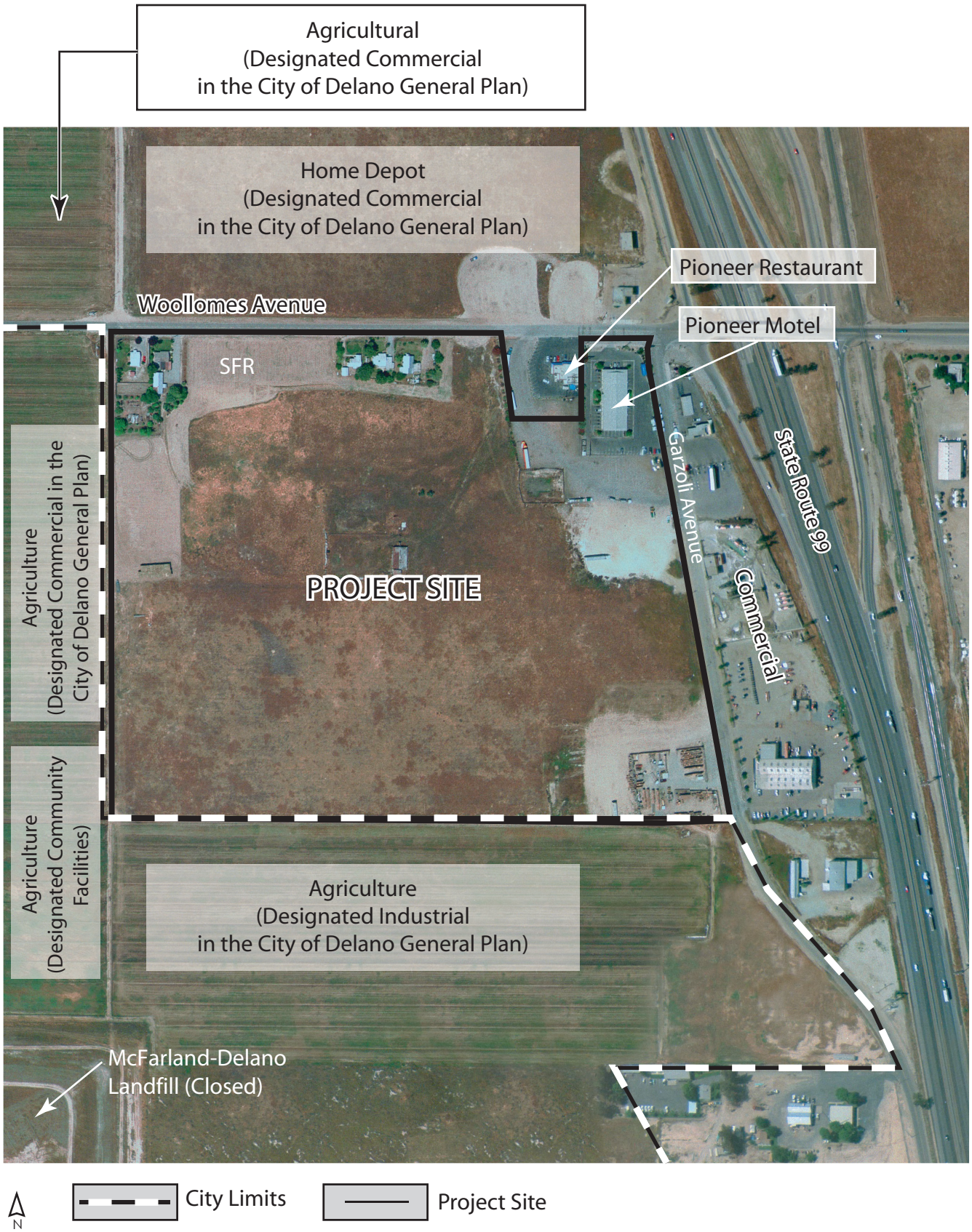

Source: Kern County Governments, 2000

T:\Delano Plaza\Graphic Development\Illustrator Files\Figure 2-7.ai, September 2005

FIGURE 2-7
SURROUNDING LAND USES

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- To provide a commercial development that can capture existing "pass-by" trips on State Route 99, bringing new revenue to the City of Delano;
- To provide goods and services at a local site, thereby reducing the number of trips currently being made to shop for these same goods and services at other neighboring cities;
- To provide a commercial retail shopping center on a large, undeveloped lot in close proximity to an existing highway, near other commercial services and residential areas, in order to minimize travel lengths and utilize existing infrastructure to the extent possible;
- To provide a commercial center of at least 40 net acres; providing sufficient development area to allow a mixture of uses to create a destination commercial center that will attract various types of customers to the City of Delano;
- To create an atmosphere of fun and relaxation for customers in addition to a shopping experience;
- To provide a commercial development that can be adequately served by public services and utilities in a feasible manner;
- To substantially reduce sales dollar leakage out of the City of Delano;
- To provide a commercial development that creates new jobs for City residents; and
- To complete the development of a large-scale retail shopping center on the subject property in a manner substantially consistent with the goals and policies of the *City of Delano General Plan* designation as "Community Retail Commercial".

These objectives are critical in the evaluation of the comparative merits of the Project Alternatives in **Section 4.0** of this EIR.

2.6 Project Characteristics

The project applicant submitted an application for a conditional use permit and tentative parcel map to establish a precise development plan for a 456,022 square foot regional shopping center. The proposed tentative parcel map creates eleven new parcels from eight existing parcels. The proposed project would include two large anchor stores, retail shops and restaurants (sit-down and fast-food). The large anchor stores would include a 228,751 square foot Wal-Mart Supercenter store and a 172,463 square foot home improvement store. The Wal-Mart Supercenter will offer groceries and general retail merchandise including, but not limited to, alcohol for off-site consumption, pool chemicals, petroleum products, pesticides, paint products, firearms, and ammunition. The Wal-Mart Supercenter will include a pharmacy with two drive-thru lanes; a vision and hearing care center; food

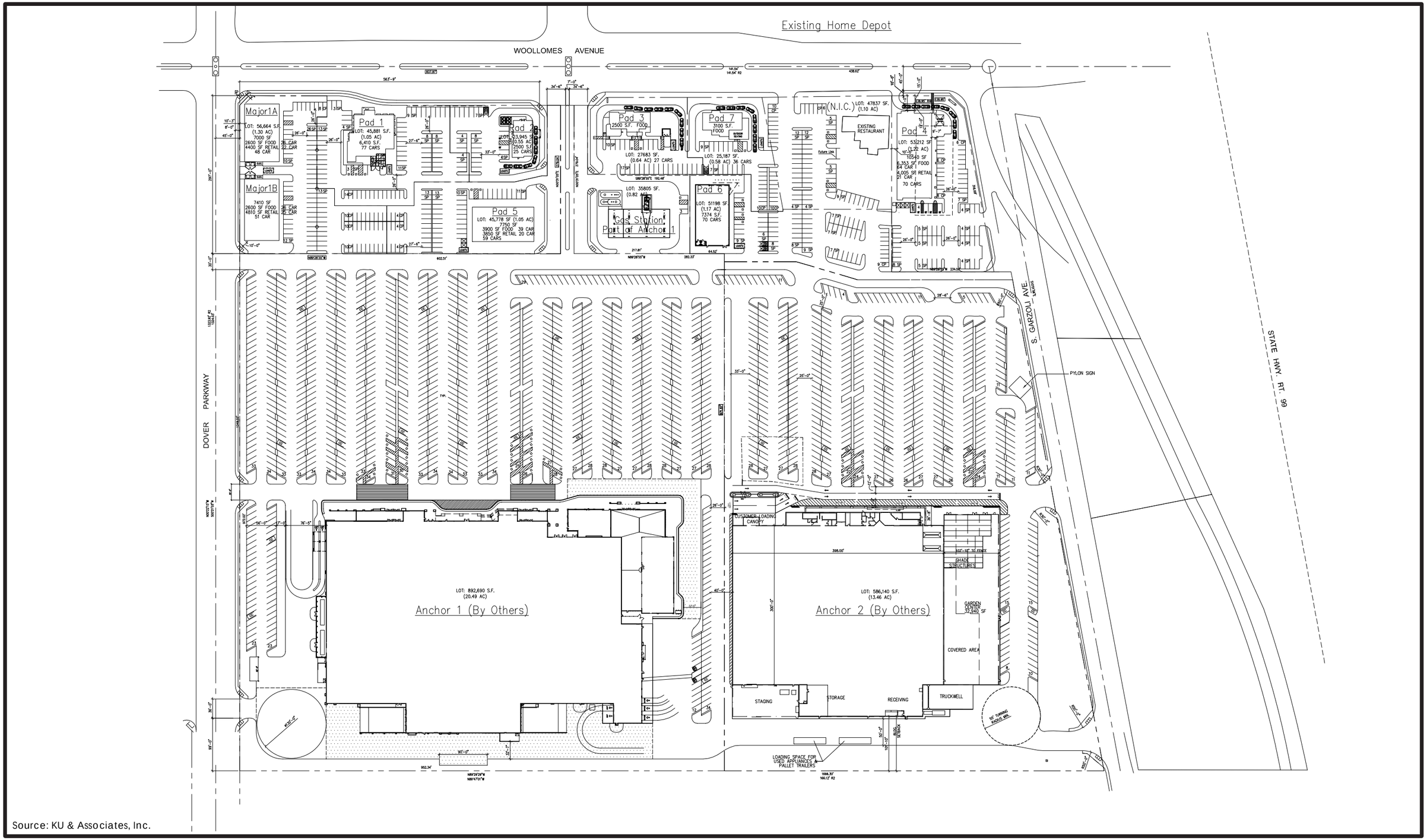
service; a photo studio and photo finishing center; a banking center; an arcade; a tire and lube facility; outdoor seasonal sales and storage; a garden center with an exterior customer pick-up facility for pre-paid bagged garden supplies; and a 14 fueling-position gas station on a separate pad. The exterior pick-up facility will have a customer service attendant and will not accommodate direct sales. All supplies picked up from the exterior pick-up facility will be pre-paid. The Wal-Mart Supercenter will operate 24-hours per day, except for the tire and lube facility. The exterior pick-up facility will operate the same hours as the garden center. The proposed project includes nine other parcels for food and retail uses with proposed building sizes ranging from 2,500 to 14,410 square feet. The site plan for the proposed project is shown in **Figure 2-8**, **Site Plan**, and a breakdown of proposed land uses is presented in **Table 2-2, Proposed Land Uses**.

TABLE 2-2
PROPOSED LAND USES[1]

Parcel or Pad	Proposed Use	Parcel Area (square feet)	Bldg Area (square feet)
Large Anchor Store #1 (Wal-Mart Supercenter) [2]	Retail	892,690	228,751
Large Anchor Store #2 (Home Improvement Superstore)	Retail	586,140	172,463
Major 1A and 1B	Food/Retail	56,664	14,410
Pad #1	Food	45,881	6,410
Pad #2	Food	23,945	2,500
Pad #3	Food	27,683	2,500
Pad #4[1]	Food/Retail	53,212	10,540
Pad #5	Retail	45,778	7,750
Pad #6	Food/Retail	51,198	7,374
Pad #7	Food	25,187	3,100
14 fueling-position Gas Station	Retail	35,805	224
Total		**45 acres**	**456,022**

Source: KU & Associates, Inc. Architects and William Parish Design Development Consultants, Inc.
Notes: 1) A conditional use permit was approved for Pad #4 by the City of Delano on February 21, 2006, however this pad is incorporated herein to evaluate the overall impacts of the Delano Marketplace as described herein. 2) Large Anchor Store #1 (Wal-Mart Supercenter) includes a drive through pharmacy.

The height of the majority of the buildings at the project site would be within 26 and 38 feet with one building reaching a height of 40 feet. Schematic building designs and elevations of the proposed structures are shown in **Figures 2-9** through **2-15.**



Source: KU & Associates, Inc.

0 50' 100' 200'

Scale in Feet

N

Figure 2-8
Site Plan

PMC

T:\Delano, City of\Delano Plaza\Graphic Development\Illustrator Files\Figure 2-8.ai, September 2005

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Source: KU & Associates, Inc.

T:\Delano Plaza\Graphic Development\Illustrator Files\Figure 2-9.ai, September 2005

FIGURE 2-9

CONCEPTUAL ARCHITECTURE - MAIN ENTRANCE FROM WOOLLOMES AVENUE

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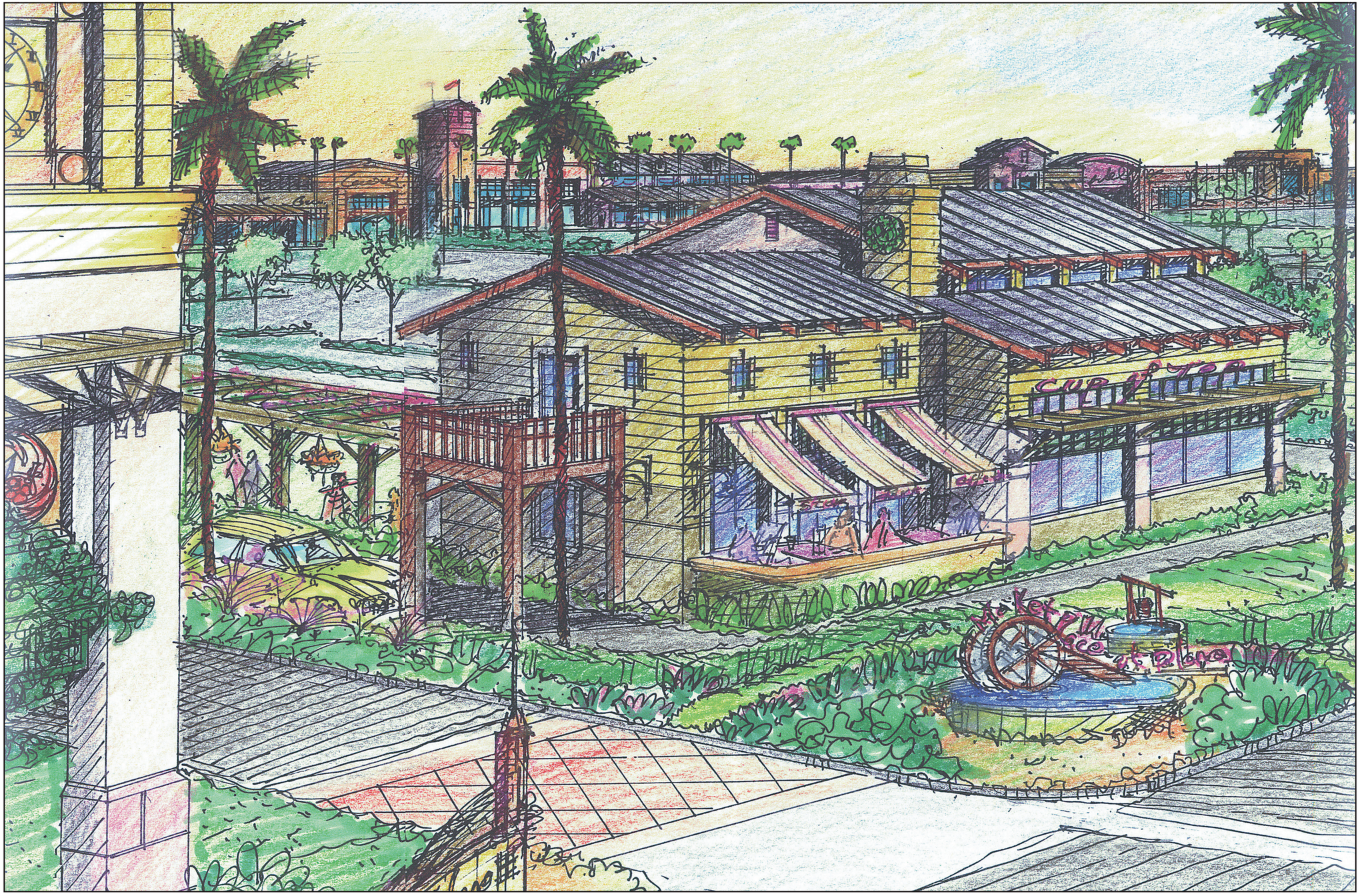

Source: KU & Associates, Inc.

T:\Delano Plaza\Graphic Development\Illustrator Files\Figure 2-10.ai, September 2005

FIGURE 2-10

CONCEPTUAL ARCHITECTURE - CORNER OF WOOLLOMES AND GARZOLLI

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Source: KU & Associates, Inc.

T:\Delano Plaza\Graphic Development\Illustrator Files\Figure 2-11.ai, September 2005

FIGURE 2-11
CONCEPTUAL ARCHITECTURE - MAJOR RETAIL ANCHOR

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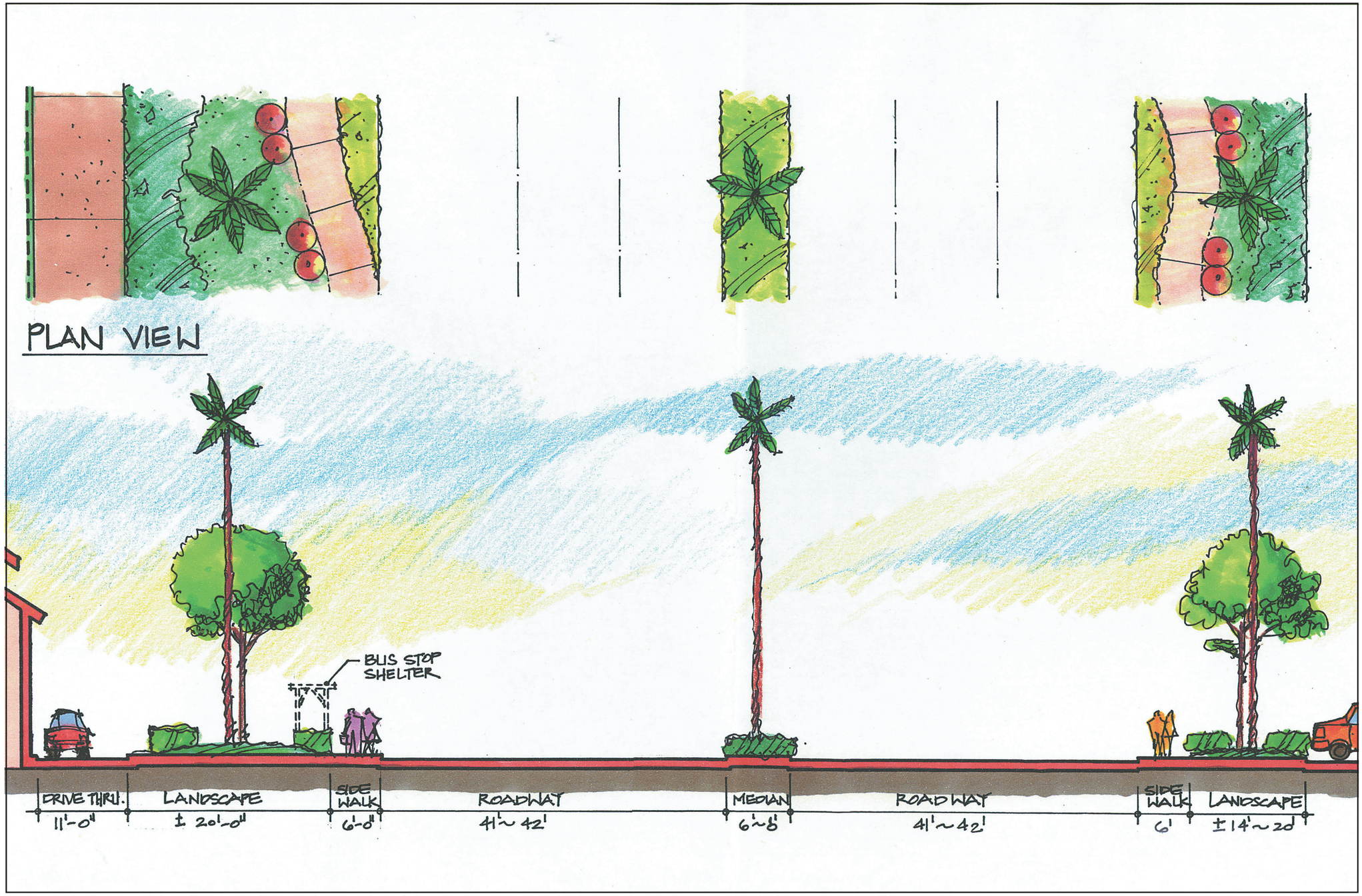

Source: KU & Associates, Inc.

T:\Delano Plaza\Graphic Development\Illustrator Files\Figure 2-12.ai, September 2005

FIGURE 2-12
CONCEPTUAL ARCHITECTURE - WOOLLOMES AVENUE CROSS SECTION

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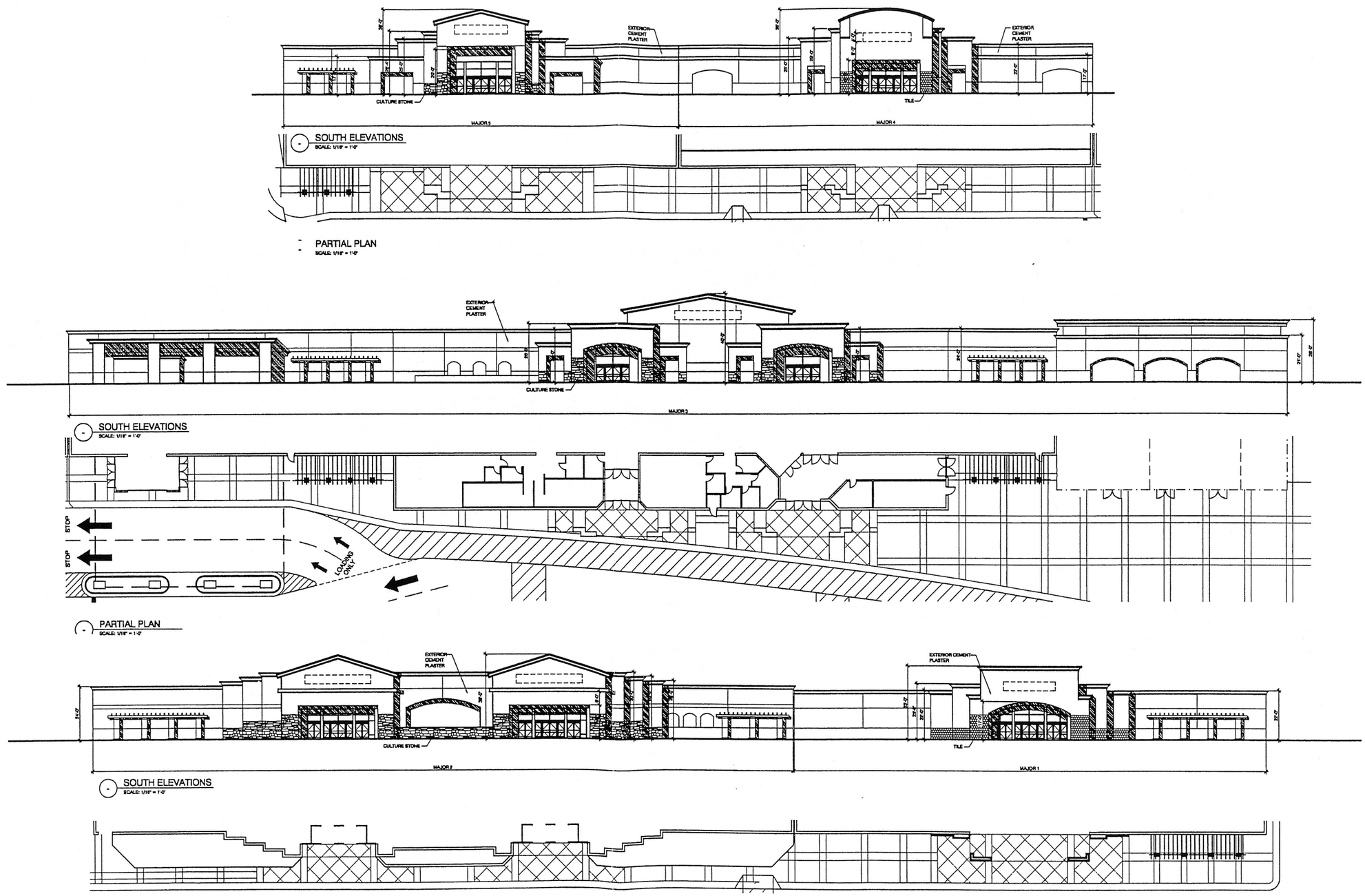

Source: Frank Shih Architects, Inc.

0 16' 32'
SCALE: 1/16" = 1'-0"

FIGURE 2-13
CONCEPTUAL ELEVATIONS

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T:\Delano Plaza\Graphic Development\Illustrator Files\Figure 2-13.ai, September 2005

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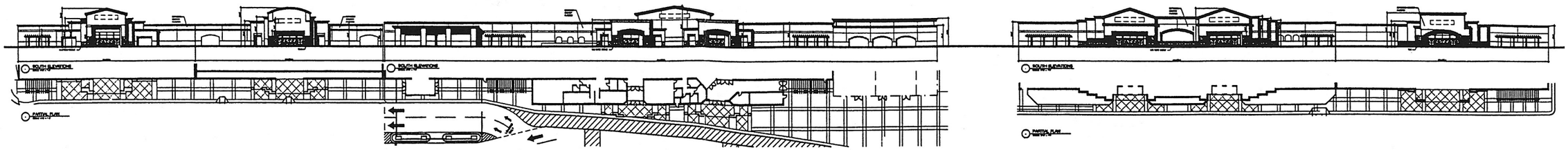
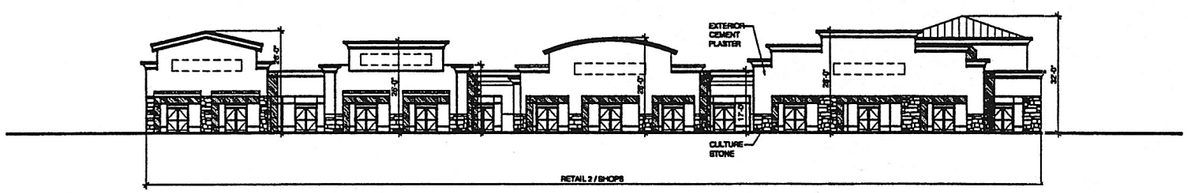
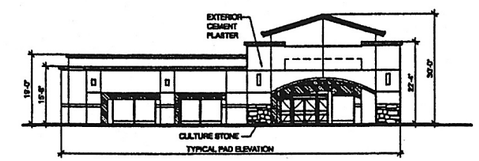


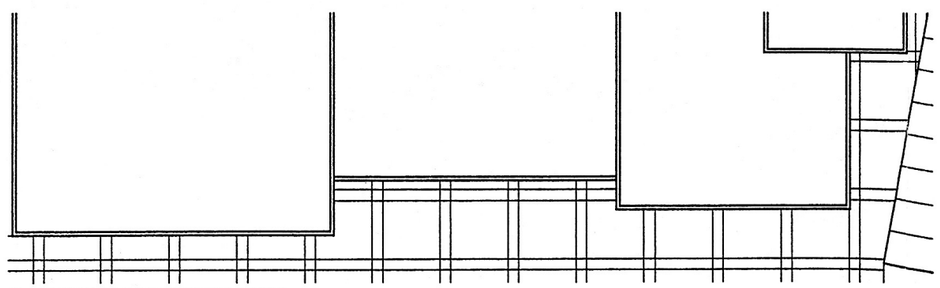
MAJOR 1 TO MAJOR 5 ELEVATIONS
SCALE: N.T.S.



WEST ELEVATION (PROGRESS STUDY)
SCALE: 1/16" = 1'-0"



ELEVATION
SCALE: 1/16" = 1'-0"



PARTIAL PLAN (PROGRESS STUDY)
SCALE: 1/16" = 1'-0"

PARTIAL PLAN
SCALE: 1/16" = 1'-0"

Source: Frank Shih Architects, Inc.

T:\Delano Plaza\Graphic Development\Illustrator Files\Figure 2-14.ai, September 2005

0 16' 32'
SCALE: 1/16" = 1'-0"

FIGURE 2-14
CONCEPTUAL ELEVATIONS

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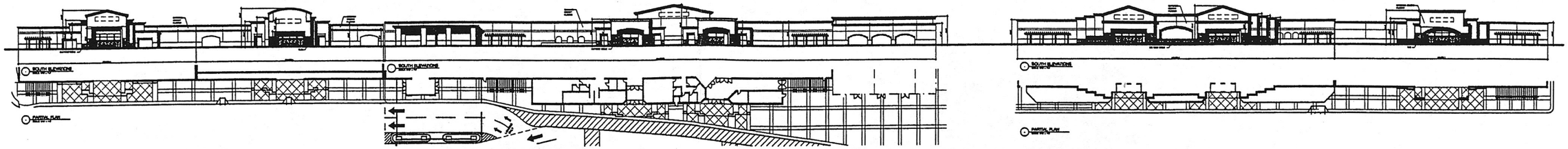
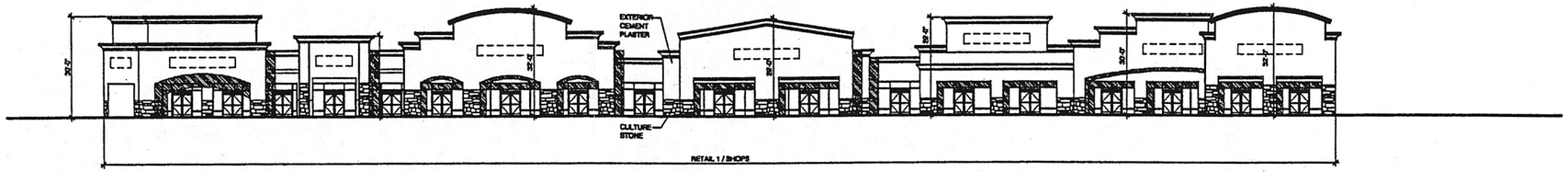
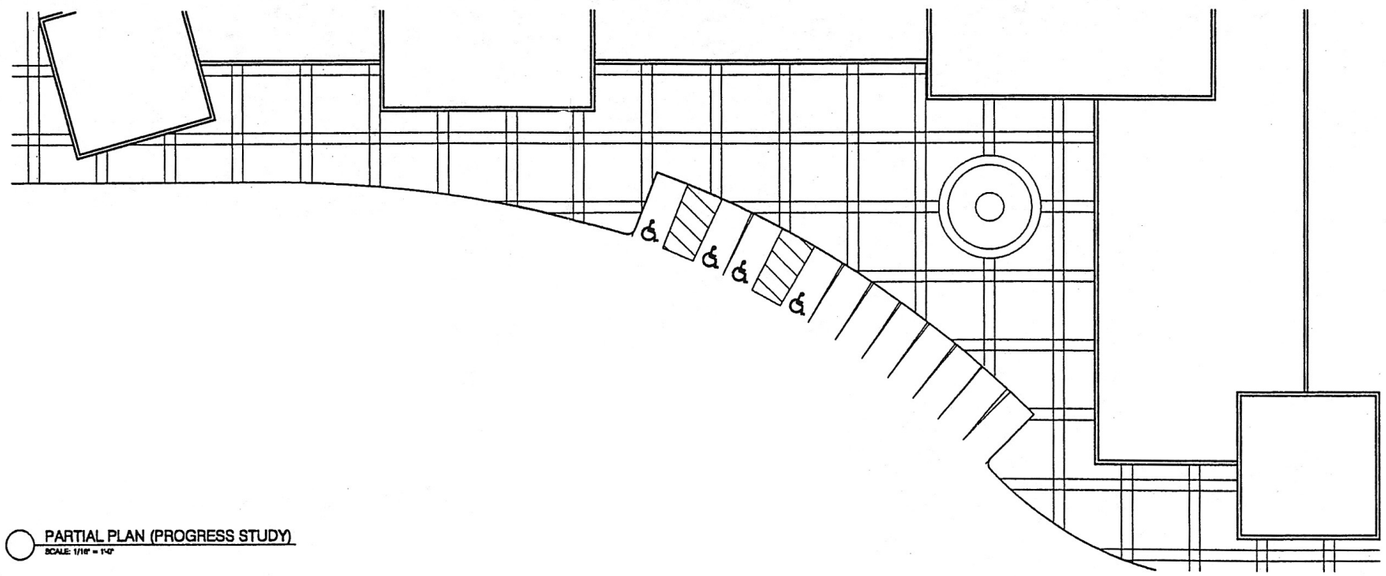


MAJOR 1 TO MAJOR 5 ELEVATIONS
SCALE: N.T.S.



EAST ELEVATION (PROGRESS STUDY)
SCALE: 1/16" = 1'-0"



PARTIAL PLAN (PROGRESS STUDY)
SCALE: 1/16" = 1'-0"

Source: Frank Shih Architects, Inc.

T:\Delano Plaza\Graphic Development\Illustrator Files\Figure 2-15.ai, September 2005

0 16' 32'
SCALE: 1/16" = 1'-0"

FIGURE 2-15
CONCEPTUAL ELEVATIONS

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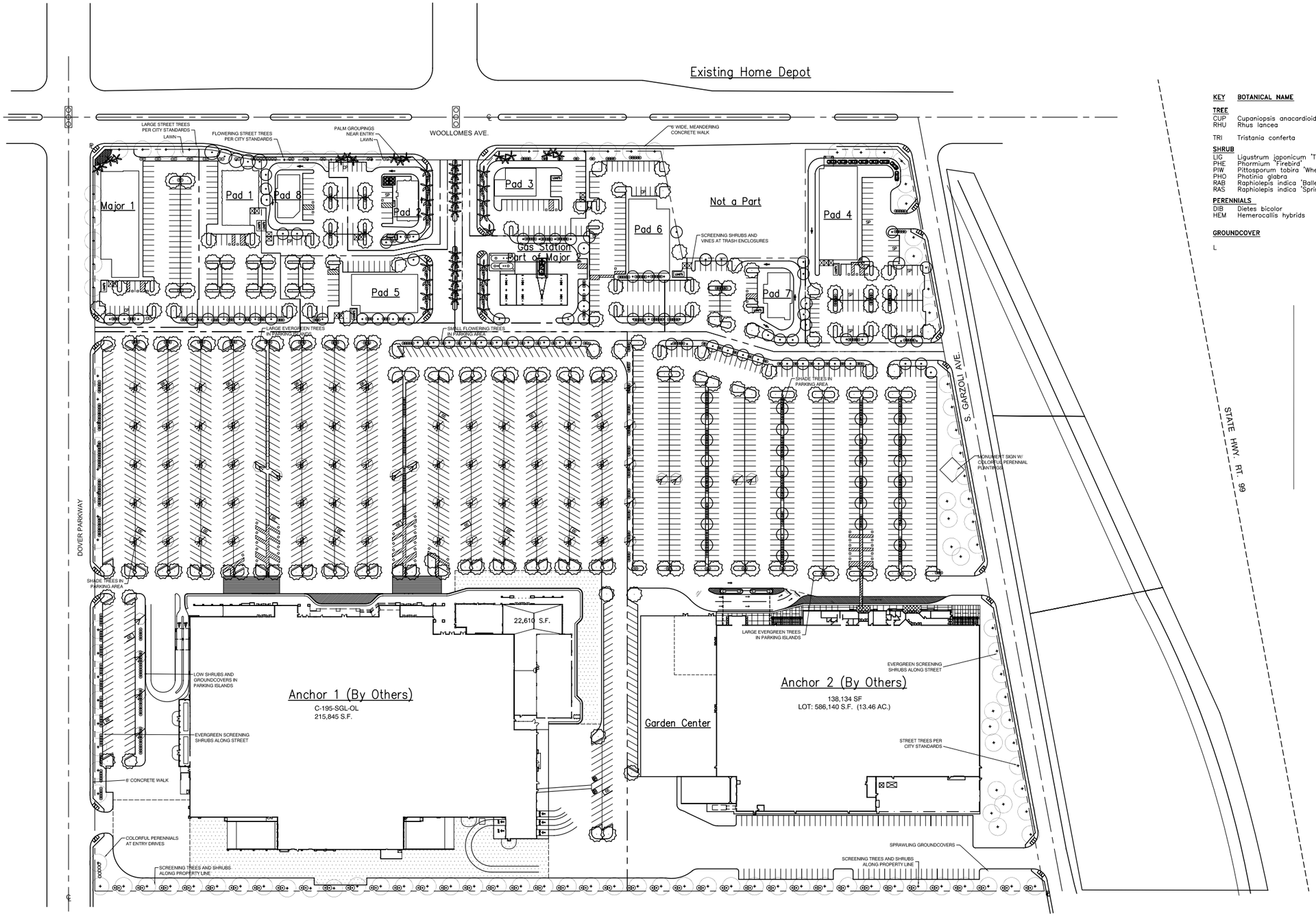
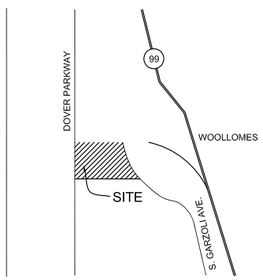


PLANT LEGEND

KEY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
TREE				
CUP	Cupaniopsis anacardioides	Carrotwood Tree	24" box	
RHU	Rhus lancea	African Sumac	24" box	
TRI	Tristania conferta	Brisbane box	24" box	
SHRUB				
LIG	Ligustrum japonicum 'Texanum'	Texas Privet	5 gal	
PHE	Phormium 'Firebird'	New Zealand Flax	5 gal	
PIW	Pittosporum tobira 'Wheeler's Dwarf'	Dwarf Mock Orange	5 gal	
PHO	Photinia glabra	Japanese Photinia	5 gal	
RAB	Raphiolepis indica 'Ballerina'	Indian Hawthorn	5 gal	
RAS	Raphiolepis indica 'Springtime'	Indian Hawthorn	5 gal	
PERENNIALS				
DIB	Dietes bicolor	Fortnight Lily	5 gal	
HEM	Hemerocallis hybrids	Daylily	1 gal	
		Varigated Society Garlic	1 gal	
GROUNDCOVER				
L				



Source: Phil May, Landscape Architect

T:\Delano Plaza\Graphic Development\Illustrator Files\Figure 2-16.ai, September 2005

FIGURE 2-16
LANDSCAPE PLAN

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Operations

Employees. The proposed project would provide approximately 580 full-time jobs.

Hours of Operation. The proposed Wal-Mart Supercenter store and gas station would operate 24-hours a day. The home improvement store is anticipated to operate from approximately 6:00 a.m. to 10:00 p.m., Monday through Saturday and from approximately 7:00 a.m. to 8:00 p.m. on Sundays. A majority of the retail stores and restaurants would not open any earlier than 5:00 a.m. and would close no later than 11:00 p.m.

Deliveries. Estimated deliveries for the proposed Wal-Mart Supercenter store would occur during the evening hours when most of the retail center is closed. All deliveries to the home improvement store and other retail stores and restaurants are anticipated to occur during store hours.

Energy Efficiency Components in Building Design

Pursuant to the California building Standards Code and the Energy Efficiency Standards, the proposed project will incorporate energy efficient components into the design of all buildings associated with the proposed project. These measures include: insulation; the use of energy-efficient heating, ventilation and air conditioning equipment (HVAC); solar-reflective roofing materials; energy-efficient indoor and outdoor lighting systems; the reclamation of heat rejection from refrigeration equipment to generate hot water; the incorporation of skylights, etc.

Wal-Mart Supercenter. The proposed Wal-Mart Supercenter, the largest of the anchor stores within the proposed regional shopping center is proposing the incorporation of energy efficient measures into the project design. According to representatives from Wal-Mart, the proposed Wal-Mart Supercenter will be built of nearly 100 percent recycled structural steel. All of the plastic baseboards and much of the plastic shelving would be comprised of 100 percent recycled plastic. The sinks in the restrooms will include sensor-activated low flow toilets. The faucets in the restrooms will reduce usage by approximately 84 percent and save approximately 20 percent usage over similar operated systems. Each refrigeration system within the Wal-Mart Supercenter will include ozone friendly refrigerants. The following energy-related features will be incorporated into the design of the proposed project:

- *Day lighting (skylights/dimming):* The store will include a day lighting system, which automatically and continuously dims all of the lights as the daylight contribution increases.

- *Night Dimming*: The Wal-Mart Supercenter will dim lighting to about 65 percent illumination during the late night/early morning hours.
- *Energy efficient HVAC units:* The Wal-Mart Supercenter will utilize "super" high efficiency packaged HVAC units. While the industry standard EER (Energy Efficiency Ratio) is 9.0, the units that will be utilized at the store are anticipated to be rated at between 10.8 to 13.2. These units range between 4-17 percent more efficient than required by Title 24.
- *Central Energy Management:* The store will be equipped with energy management systems to be monitored and controlled from Wal-Mart's home office in Bentonville, Arkansas. These systems enable Wal-Mart to monitor energy usage and performance at the store 24 hours per day, seven days per week.
- *Water Heating:* The Wal-Mart Supercenter will capture waste heat from the refrigeration equipment to heat water for the kitchen prep areas of the store. This represents energy savings of 165 million British Thermal Unit (BTU's) per year.
- *White Roof:* The Wal-Mart Supercenter will have a "white" membrane roof vs. most retail stores that have a darker color. The high solar reflectivity of this membrane results in lowering the "cooling" load by about 10 percent. No PVC-roofs will be used.
- *Interior Lighting Retrofit Program:* The Wal-Mart Supercenter will utilize T-8 fluorescent lamps and electronic ballasts. The energy load is reduced by approximately 15-20 percent as a result of this upgrade.
- *LED Signage Illumination:* The Wal-Mart Supercenter will use LED lighting in all of the internally illuminated building signage. The application of LED technology is over 70 percent more energy-efficient than fluorescent illumination. With lamp life ranging to 100,000 hours, using LEDs significantly reduces need to manufacture and dispose of fluorescent lamps.
- *Integrally Cooled Concrete Floors:* The use of concrete floors represents a major reduction of carpet and vinyl tile finishes from new Wal-Mart Supercenter stores. This reduces environmental concerns with the manufacture and disposal of PVC, it also reduces the need for most chemical cleaners, wax, and wax strippers. The flooring area for the grocery component of the proposed project would be comprised of colored concrete floors.

The proposed Wal-Mart Supercenter will be designed and equipped to recycle oil, tires, auto batteries, cardboard, vegetable oil, single use cameras, bottles and cans, plastic waste, electronic waste, and silver from the processing of photos in the photo processing department.

LANDSCAPING

As shown in the conceptual Landscape Plan in **Figure 2-16, Conceptual Landscaping Plan** the proposed project includes a variety of trees, shrubs, perennials and groundcover. Screening trees and shrubs are located along all exterior site boundaries while shade trees and evergreens are included in the parking areas. The main entrance to the project site along Woollomes Avenue includes a monument sign with palm tree groupings and perennials; other entrances also include perennial plantings. Garbage enclosures are screened by shrubs and vines. The types of trees, shrubs, perennials and groundcover proposed for the project site are listed in **Table 2-3, Conceptual Landscaping Plan**.

TABLE 2-3
CONCEPTUAL LANDSCAPING PLAN

Common Name	Botanical Name	Size
Trees		
Carrotwood Tree	*Cupaniopsis anacardioides*	24″ box
African Sumac	*Rhus lancea*	24″ box
Queen Palm	*Syagrus romanzoffianum*	14-inch trunk
Brisbane box	*Tristania conferta*	24″ box
Shrubs		
Texas Privet	*Ligustrum japonicum `Texanum´*	5 gallon
New Zealand Flax	*Phormium 'Firebird'*	5 gallon
Dwarf Mock Orange	*Pittosporium tobira 'Wheeler's Dwarf'*	5 gallon
Japanese Photinia	*Photinia glabra*	5 gallon
Indian Hawthorn	*Raphiolepis indica `Ballerina´*	5 gallon
Indian Hawthorn	*Raphiolepis indica `Springtime´*	5 gallon
Perennials		
Fortnight Lily	*Dietes bicolor*	5 gallon
Daylily	*Hemerocallis hybrids*	1 gallon
Varigated Society Garlic	*Tulbaghia violacea `Silver Lace´*	1 gallon
Groundcover		
Aaron's Beard	*Hypericum calycinum*	flats
Lawn	*Tall Fescue spp.*	sod

Source: Phil May Landscape Architect, 2005

Infrastructure Components and Off-site Improvements

Site Access and On-Site Circulation

The proposed project includes a new intersection with Woollomes Avenue that is designed to be the main driveway entrance to the project site. This intersection will be signalized and will align with the entrance to the existing Home Depot store located on the north side of Woollomes Avenue. An additional site access would be located on Woollomes Avenue

adjacent to Pad 4 in the northeast corner of the project site. Two project driveways are also included along Garzoli Avenue and along the proposed Dover Parkway, with additional access provided to the rear loading dock areas of both of the major anchor stores.

Woollomes Avenue/State Route 99 Interchange Improvements

The City is currently working cooperatively with Caltrans to prepare a Project Study Report (PSR)/Project Report (PR) in accordance with Caltrans requirements for the construction of interim improvements to the Woollomes Avenue/State Route 99 intersection in order to accommodate an increase in vehicular traffic associated with the proposed project. The PSR/PR is evaluating interchange options under Opening Year (2007) Project conditions and Cumulative (2030) project conditions. The PSR/PR will include a conceptual configuration that has been accepted by Caltrans and will identify a recommended alternative for reconstruction of the interchange. The PSR/PR will include an analysis of the treatment of intersections along Woollomes Avenue at the Site Access, Garzoli Avenue, High Street, Lexington Street, and State Route 99 Southbound and Northbound ramps and is addressing the adjacent railroad. The interim interchange configuration analysis in the PSR/PR will include final design recommendations for the following conceptual design, subject to review and approval by Caltrans, the City of Delano, and the State of California Public Utilities Commission (PUC). The conceptual design for the interim improvements to the Woollomes Avenue/State Route 99 interchange will likely consist of the following:

- **Woollomes Avenue/State Route 99 Ramps Intersections** - Relocate State Route 99 northbound on-ramp to the east, connecting from High Street; and State Route 99 southbound ramps to the west. Convert northbound High Street to a one-way roadway for northbound traffic only with southbound traffic on High Street redistributed to Lexington Street.
- **Garzoli Avenue/Woollomes Avenue Intersection** - Garzoli Avenue would be disconnected from Woollomes Avenue and the southbound on-ramp. Construct a street connecting Garzoli Avenue to Dover Parkway south of the project site to allow northbound traffic on Garzoli Avenue to access Woollomes Avenue via Dover Parkway.

Section 3.12, Traffic and Circulation discusses the interim interchange configuration analysis in more detail.

Parking

The proposed project includes approximately 2,242 parking spaces.

Utilities

The proposed project will connect to existing sanitary sewer and domestic water mains in the vicinity of the project site.

Water. The project site would be provided water service through an existing 12-inch water line, which runs along Woollomes Avenue; additional water service infrastructure improvements will be constructed on-site. All water lines will be constructed in accordance with standards of the City of Delano.

Wastewater. Sanitary sewer service to the project site would be provided through an existing 18-inch sanitary sewer line that runs along Woollomes Avenue. Wastewater improvements will be constructed in accordance with standards of the City of Delano.

Stormwater. Stormwater drainage from the proposed project will be directed to three catch basins located on the south side of Woollomes Avenue. A proposed new storm drain line, with pipe sizes ranging from 24 to 42-inches would convey stormwater flows westward to Stradley Avenue. This new line will intercept an existing 72-inh line which empties into an existing unlined stormwater detention basin with a capacity of approximately 100 acre-feet wth is owned by the City of Delano. In addition, the proposed project would install a 21-inch storm drain line within the proposed Dover Parkway.

According to calculations performed by Landmark Surveying & Engineering, the proposed project would be required to expand the City's existing stormwater basin to provide 5.5 acre-feet of basin capacity in order to accommodate stormwater flows generated by the proposed project. An area of approximately 700 feet by 15 feet by 12 feet deep would need to be excavated from the easterly side of the City's existing stormwater detention basin to accommodate stormwater runoff from the project site. In order to adequately drain stormwater runoff, the proposed project includes adding approximately 125,000 cubic yards of this soil in order to raise the elevation of the project site. The fill will be obtained from the City's stormwater detention basin located at the southwest corner of the intersection of South Albany and Woollomes Avenue.

Site Preparation and Demolition

According to the project applicant, all structures have been demolished (Personal Communication with Geary Coats on February 8, 2006). Existing trees and vegetation would be removed prior to grading.

Project Phasing

Construction of the parking lot, infrastructure and the two large anchor stores would be completed within six to eight months of commencement of construction. Each of the

remaining retail and restaurant pads would be rough graded and construction would occur once each pad is sold.

2.7 REQUESTED ACTIONS AND REQUIRED APPROVALS

This EIR provides the environmental information and analysis and primary CEQA documentation necessary for the City of Delano to adequately consider the effects of the requested development proposal. The City of Delano, as lead agency, has approval authority and responsibility for considering the environmental effects of the proposed project as a whole. In order to implement the proposed project, an application has been submitted to the City of Delano.

As mandated by CEQA Guidelines Section 15124(d), this section contains a list of agencies that are expected to use the EIR in their decision-making to grant permits and approvals, and a list of the approvals for which the EIR will be used. These lists include information that is known to the lead agency:

Local Agencies

- City of Delano (Lead Agency)
  - Conditional Use Permits,
  - Tentative Map,
  - Architectural and Site Plan Reviews,
  - All Final Improvement Plans,
  - Building, grading, and other applicable construction permits for all components of the project,
  - Development Agreement
  - All subsequent actions to the greatest extent possible

Regional Agencies

- Regional Water Quality Control Board (Responsible Agency)
  - National Pollutant Discharge Elimination System Permits

State Agencies

- California Department of Transportation (Responsible Agency)

Encroachment Permit for all work in a State road right-of-way

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REFERENCES/DOCUMENTATION

City of Delano. *General Plan*. Adopted December 5, 2005.

City of Delano. *Initial Study/Mitigated Negative Declaration for Home Depot*. February, 2004.

City of Delano. *Notice of Preparation of a Draft Environmental Impact Report*. January 16, 2005.

City of Delano. *Zoning Ordinance*. April 19, 2004.

Coats, Geary T. Application for Site Plan Review, City of Delano. September 15, 2004.

Coats, Geary T. Personal Communication. February 8, 2006.

Governor's Office of Planning and Research, State of California. *Guidelines for Implementation of the California Environmental Quality Act,* as amended. 2005.

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3.0 Environmental Setting, Impacts and Mitigation Measures

Section 3.1
Aesthetics and Visual Resources

This section of the RDEIR identifies potential aesthetic and visual impacts that could result from the proposed project. The primary visual and aesthetic concerns associated with the proposed project are the general changes in land use and visual character from fallow agricultural land, rural residential and limited commercial uses to a regional shopping center. Views from Woollomes Avenue and other roads in the vicinity are addressed in this analysis. Visual impacts were evaluated using a combination of a site reconnaissance; photo documentation; aerial photographs; site plan; elevations; schematic building designs; and review of existing policies in the *City of Delano General Plan* (City of Delano 2005). Aesthetic impacts regarding the potential for urban decay or blight to occur as a result of the proposed project are discussed in **Section 3.9**, **Land Use Planning**.

3.1.1 EXISTING SETTING

REGIONAL SETTING

The City of Delano is located in northern Kern County along State Route 99, approximately thirty miles northwest of the City of Bakersfield and seventy-eight miles southeast of the City of Fresno, see **Figure 2-1**, **Regional Location**, and **Figure 2-2**, **Project Vicinity**, in **Section 2.0**, **Project Description**. The City of Delano is located in the southern portion of California's agriculturally rich San Joaquin Valley, ten miles from the western foothills of the Sierra Nevada Mountains and approximately twenty-five miles from the Coast Ranges to the west. Due to the surrounding productive farmland and gentle topography, agriculture is a significant economic activity in the Delano region and the area can be characterized as an agricultural-based community. The fertile soils of the area produce orchard and field harvests of grapes, plums, almonds and alfalfa, among others. The area has temperate weather with cool winters and summers that are dry and warm. Approximately 85 percent of the precipitation occurs during the winter, from November to April. Rainfall averages around eight inches per year.

VISUAL CHARACTER OF THE PROJECT SITE

The project site is located in the southern part of the City of Delano at the southwest corner of the Woollomes Avenue and Garzoli Avenue intersection, near the Woollomes Avenue interchange with State Route 99. The project site is relatively level and slopes gently to the southwest and is predominately covered by a moderate weed and ruderal vegetation growth; several structures also occupied the site prior to demolition.

At the time of the site reconnaissance in January 2005, five rural residences were located on the northern border along Woollomes Avenue. All structures at the project site have since been demolished. South of these home sites exists a depressed area in the topography that appears to be associated with soil borrowing. This area is approximately 300 feet by 200 feet and five feet deep. A two-story motel was formerly located further east down Woollomes Avenue at its intersection with Garzoli Avenue has recently been

demolished. The proposed project excludes a restaurant that is located adjacent to the motel on the west. The parcel immediately south of this restaurant contains a rectangular flood control basin of approximately 5,000 square feet. South of the recently demolished motel exists a wooden pallet repair and storage company, although no permanent structures or site improvements exist within this parcel. A vacant commercial structure within a fenced area (formerly a wrecking yard) is located near the center of the project site. The southern half of the project site is mostly vacant except for a pallet company located at the southeast corner, along Garzoli Avenue. This business is surrounded by a wooden fence and includes several small structures. According to the project applicant, all structures have been demolished or are in the process of being demolished. Photographs of the project site prior to demolition are provided in **Figures 2-4** through **2-6**, **Site Photos**.

Surrounding Land Uses

Adjacent land uses include a Home Depot home improvement store located across Woollomes Avenue north of the project site; commercial properties, including an auto and truck stop and a tractor sales and service company (located between Garzoli Avenue and State Route 99) located east of the project site; and fallow agricultural land located south and west of the project site. The project site partially surrounds the Pioneer Restaurant, located near the northeast corner of the project site, however, the restaurant is not part of the project site. The nearest existing sensitive receptors, residential dwellings, are located approximately 0.3 mile south and 0.5 mile west of the project site. The Delano Municipal Airport is located approximately a half mile east of the project site. An aerial photograph showing surrounding land uses is shown in **Figure 2-7, Surrounding Land Uses**.

SCENIC VISTAS

A scenic vista is a view of significant regional features possessing visual and aesthetic qualities of value to the community. Important visual features may include beaches, waterways, fields or mountains that comprise an overall visual essence of a region. The term "vista" generally implies a clear, expansive view, usually from an elevated point or open area. The *City of Delano General Plan* does not identify any specific scenic vistas within the City limits.

The project site is most visible along Woollomes Avenue and Garzoli Avenue. Views from State Route 99 are limited by commercial and industrial uses located between the highway and Garzoli Avenue. The project site does not possess any unique visual qualities or characteristics.

LIGHT AND GLARE

Generally, concerns over light and glare relate to the aesthetics of an area when a new light source is introduced in a relatively undeveloped or rural area. In other instances, new light

sources can become a nuisance to adjacent land uses and possibly cause a hazardous condition for traffic. Current sources of illumination in the City of Delano consist of street lamps, minor identification signage and other lighting associated with existing development.

3.1.2 REGULATORY SETTING

CALIFORNIA SCENIC HIGHWAY PROGRAM

The State Legislature created the California Scenic Highway Program in 1963. Its purpose is to preserve and protect scenic highway corridors from changes which would diminish the aesthetic value of lands adjacent to highways. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. Cities and counties can nominate eligible scenic highways for official designation by identifying and defining the scenic corridor of the highway. The municipality 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. There are no designated scenic highways or eligible highways in the City of Delano or surrounding area.

CITY OF DELANO GENERAL PLAN

Aesthetics and design issues are addressed in the Community Design Element of the *City of Delano General Plan* (City of Delano 2005). Section 6.5, Gateways/Streetscape Design and Section 6.7, Commercial and Industrial Development contain objectives and policies regarding aesthetic impacts that are relevant to the proposed project. Although there are no designated scenic corridors identified in Delano, Woollomes Avenue has been designated by the City as a "gateway street" in the Circulation Element. Objectives, policies and standards for commercial development within "gateways" and other design considerations are presented below.

Objective Improve the appearance of City streets and reduce visual clutter along the City's main thoroughfares/corridors. (Section 6.5 - Gateways/Streetscape Design).

Policy 1 Promote a city-wide street tree planting program which enhances the appearance of the street and is scaled in relationship to the function of the roadway. Tree wells shall be located and designed to ensure adequate sight distance for traffic and pedestrian safety.

Policy 2 The undergrounding of utilities along the City's main corridors is a priority. In developing areas, new development projects shall place all

new utility lines underground. The City will also explore a range of options for undergrouding utilities in existing developed areas.

Policy 4 Ensure all signs are compatible with the overall streetscape design including the redesign/removal of signs, which are disruptive elements.

Objective Ensure that all commercial development is attractive and of high-quality design, to enhance the image of the City. (Section 6.7 - Commercial and Industrial Development).

Policy 1 Establish site plan review procedures for all commercial and industrial development, including provisions for building setbacks, lot coverage, parking, access and circulation, outdoor lighting, signage, and landscaping.

Policy 5 Buildings on a site should be linked visually through architectural style, colors and materials, signage, landscaping, design details such as lighting fixtures, and the use of arcades, trellises or other open structures.

Policy 6 The height and scale of new development should be compatible with that of surrounding buildings where an established pattern or character is apparent. New development should provide a transition from the height of adjacent structures to the maximum height of new development.

Policy 7 Tall dominating structures should be broken up by creating horizontal emphasis through the use of trim, awnings, eaves or other ornamentation, and by using a combination of complementary colors.

Policy 8 All roof equipment shall be screened from line of sight from the ground level. Screening should be an integral part of the roof design and not appear as a "tacked on" afterthought. For flat roofs, a screen enclosure behind the parapet wall may be used if it is made to appear as an integral part of the structure's design. Ground or interior-mounted mechanical equipment (with appropriate screening) is encouraged as an alternative to roof-mounting.

Policy 9 Structures in pedestrian-oriented areas should provide continuous storefronts at the ground level front elevation.

Policy 10 Entries should be protected from the elements and should create a focus or sense of entry for the building. Wall recesses, roof overhangs, canopies, arches, signs, and other similar architectural features should be integral elements of building design calling attention to the importance of the entry.

Policy 12 Buildings shall be designed with a precise concept for adequate signage. Signs shall be integrated into the design of buildings and should compliment the architecture. All signage shall be compatible with the building and site design relative to colors, materials and placement, and shall respect established architectural and/or historical character.

Policy 13 Monument-type signs are preferred over tall pole signs for business identification, wherever possible. Where several tenants occupy the same site, individual wall mounted signs are appropriate in combination with a monument sign identifying the development. Custom signs, which are unique and creative, are encouraged, provided that the style of the sign complements the style and design of the building. Historic signs that are in themselves architectural features shall be retained.

Policy 14 The planting of street trees is encouraged for all existing and new commercial and industrial development.

Policy 15 Buildings, landscaping, parking and other development features should be arranged in a manner that is compatible with the size, scale, and appearance of nearby development.

Policy 16 Landscaped areas should be clustered on a site to maximize their effect on the public view.

Policy 17 Landscaping should be used to define areas such as entrances to buildings and parking lots, define edges of various land uses, provide transition between neighboring properties (buffering), and provide screening for outdoor storage, loading and equipment areas.

Policy 18 Landscaping should be in scale with adjacent buildings and be of appropriate size at maturity to accomplish its intended purpose.

Policy 19 Areas of a site that are not utilized for parking, circulation, storage or other uses, shall be landscaped.

Policy 20 Parking should be screened and is to be visually subordinate to the

buildings on a site. Parking lots shall not overwhelm views of a site and shall incorporate landscaping for all areas not used for vehicle storage, access or circulation.

Policy 24 Loading and trash facilities shall be located where they may be adequately screened from view (generally at the rear of the structures, away from the street).

Policy 25 Long expanses of fence should be offset and architecturally designed to prevent monotony. Landscaped pockets and limited openings should be provided along said walls.

CITY OF DELANO ZONING ORDINANCE

Policies contained in the *City of Delano Zoning Ordinance* focus on implementing the General Plan by guiding and regulating development. The following policies in the *Zoning Ordinance* describe standard conditions of design review for non-residential construction.

Section 20.2.80 – Design Review

5) Design Criteria (Non-Residential)

a. The design and layout of a proposed development shall be consistent with the General Plan, the provisions of this Title, City Design Guidelines, and any adopted architectural criteria for specialized areas such as designated historic districts, theme areas, specific plans, or planned developments.

b. New, renovated, or remodeled development shall demonstrate that the following general design criteria have been integrated into the design and layout of the proposed development.

(1) Establish an architectural and siting design theme that is compatible with surrounding existing and planned development that includes the following elements.

(a) A relationship to prominent design features existing in the immediate area (i.e., trees, land form, key elements of adjacent development, etc.);

(b) A relationship to existing structures and neighborhood character. This includes prohibiting any device being or resembling security bars, gates, or other similar security devices from being placed over or on windows or doors on the exterior of any building, or the interior of any building if visible from a public street or public right-of-way; excepting doors and windows on the ground level portion of the rear of a building facing an alley;

(c) A relationship to the natural environment (i.e., washes, native vegetation, and community landscaping).

(2) Design the development to create pleasing transitions to surrounding development by incorporating the following elements.

(a) The bulk of new structure(s) relates to the prevailing or planned scale of adjacent development;

(b) Setbacks from streets and adjacent properties relate to the scale of the structure and the function of the street and encourage pedestrian scale and uses; and

(c) Tall structures are made less imposing by physically stepping them back from the street.

(3) Respect the identified views and view corridors of existing developments to the greatest extent possible. Where applicable, view corridors oriented toward existing or proposed community amenities, such as parks, open space, or natural features, are to be enhanced.

(4) Create subtle variations in architectural and landscape components that provide visual interest, but do not create abrupt changes or cause discord in the overall character of the neighborhood.

(5) Provide appropriate transitions between different projects by providing buffer areas, landscaping, and other similar treatments (e.g., hedges, walls, fences, berms, or landscaped open space).

(6) Provide a harmonious appearance of the development with the surrounding environment and existing developments based on the compatibility of individual structures rather than one specific style of architecture.

(7) Avoid uninterrupted fences and walls, unless they are needed for specific screening, safety, or sound attenuation purpose. Where needed, fences or walls shall be required to:

(a) Relate to both the site being developed and surrounding developments, open spaces, streets, and pedestrian ways;

(b) Respect existing view corridors to the greatest extent possible; and

(c) Incorporate landscape elements or changes in materials, color, or texture in order to discourage graffiti, and prevent undue glare, heat, reflection, or aesthetic inconsistencies.

(8) Incorporate the following lighting concerns into development proposals.

(a) Lighting fixtures are to be attractively designed to complement the overall design theme of the project;

(b) Lighting shall create a festive atmosphere within commercial areas by outlining buildings, trees, or other architectural features to encourage nighttime use of those areas by pedestrians; and

(c) On-site lighting shall create a safe environment, adhering to established crime prevention standards, but shall not result in nuisance levels of light or glare on adjacent properties.

(9) Architectural plans for development shall be required to incorporate the following building elevation and screening criteria:

(a) All exterior wall elevations of buildings and screen walls shall have architectural treatments that enhance the appearance of the building or wall;

(b) Compatible materials and consistent style shall be evident within a development in all exterior elevations; and

(c) Within multifamily, commercial, office, and mixed use business park developments, trash enclosures, loading areas, mechanical equipment, and outdoor storage areas shall be screened from view from public streets, and from other public views, as appropriate.

The design review process in the City of Delano is conducted by the Project Review Committee (PRC), which is authorized to approve or deny applications and to impose reasonable conditions upon such approval. Conditions may include, but are not limited to, requirements for open space; screening and buffering of adjacent properties; fences and walls; landscaping; installation and maintenance of landscaping and erosion control measures; vehicular ingress and egress; traffic circulation; signs; grading requirements; establishment of development schedules or time limits for performance or completion of improvements; and such other conditions as the PRC may deem necessary.

3.1.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on CEQA Guidelines and other performance standards recognized by the City of Delano. For the purposes of this EIR, a significant impact will occur if the project will result in one or more of the following:

1) Have a substantial adverse effect on a scenic vista;

2) Substantially damage scenic resources including, but not limited to, trees, rock outcroppings and historic buildings within a scenic highway;

3) Substantially degrade the visual character or quality of the site and its surroundings;

4) Generate a new source of light and/or glare which would adversely affect day or nighttime views in adjacent areas; or,

5) Contribute to a cumulative negative aesthetic impact or cumulative effect on the existing visual character of the site and its surroundings.

METHODOLOGY

The analysis of potential aesthetic and visual impacts is based upon a field review of the project site and surrounding areas, review of background documents from the City of Delano, including the *City of Delano General Plan* and *City of Delano Zoning Ordinance* and photographs of the project site. The aesthetic analysis also utilized the proposed site plan, landscaping plan, conceptual building renderings and elevations provided by the project applicant to assess potential visual impacts of the proposed project, as well as the proposed site plan for the interim improvements at the State Route 99/Woollomes Avenue interchange.

PROJECT IMPACTS AND MITIGATION MEASURES

Degradation of a Scenic Vista

Impact 3.1-1 Development of the proposed project would result in the conversion of land from fallow agricultural land, rural residential and limited commercial uses to a regional shopping center. These changes would affect existing views to and from surrounding properties. This is considered a **less than significant** impact.

A scenic vista is generally described as a clear, expansive view of significant regional features possessing visual and aesthetic qualities of value to the community. According to the *City of Delano General Plan* (City of Delano 2005), no scenic vistas are located within the city limits. Significant scenic views to and from the proposed project site are limited due to the lack of topography and significant visual features in the area. The proposed project would be most visible from the streets that form the northern and eastern boundaries of the project site, Woollomes Avenue and Garzoli Avenue, respectively. Existing views from State Route 99 to the east are obscured by existing commercial development between the highway and Garzoli Avenue. In addition, views of the interim improvements at the Woollomes Avenue/State Route 99 interchange would be visible from State Route 99.

Adjacent uses that are visible from the project site include a Home Depot store across Woollomes Avenue to the north and several commercial properties between Garzoli Avenue and State Route 99. Lands bordering the site on the south and west are agriculturally developed or vacant. The closed McFarland-Delano Landfill can also be seen approximately 700 feet southwest of the project site but will not degrade views from new commercial development. The proposed project will include interim improvements to the Woollomes Avenue/State Route 99 interchange and would expand the pattern of urban, commercial development found on adjacent properties to the north and east. However, the proposed project will generally improve the existing conditions of the project site; therefore, future development will not result in the degradation of any scenic vistas or

scenic resources within a state scenic highway. Proposed interim improvements at the Woollomes Avenue/State Route 99 interchange would not result in a significant visual impact based on the existing disturbed nature of the project area. Therefore, this impact is considered **less than significant**.

Degradation of Scenic Resources within a Designated Scenic Highway

According to the *City of Delano General Plan* (City of Delano 2005), the City of Delano does not have any designated scenic corridors or protected vistas within its jurisdiction and State Route 99 is not a state designated scenic highway. There are no significant trees, rock outcroppings, historic buildings or any other scenic resources found on the project site. Although there are no designated scenic corridors identified in Delano, Woollomes Avenue has been designated by the City as a "gateway street." The potential impact of this "gateway" designation on the proposed project is addressed by the site plan and design review procedures described below under **Impact 3.1-2**. The project site is not located within any state designated scenic corridor or viewshed. Development of the proposed project will have **no impact** on scenic resources within a designated scenic highway.

Visual Character

Impact 3.1-2 The proposed project would alter the visual character of the project site from vacant fallow agricultural land, rural residential and limited commercial uses to a regional shopping center. This is considered a **less than significant** impact.

The proposed project would alter the existing aesthetic character of the project site from a mixture of former commercial uses, residential uses, and fallow agricultural land to a regional shopping center. The proposed project would involve the construction of a 440,927 square foot regional shopping center consisting of two major commercial tenants: a Wal-Mart Supercenter (221,771 square feet) and a home improvement store (164,514 square feet); nine pads reserved for either food or retail uses; a 14-position gas station; and over 2,000 parking spaces. The site plan is shown in **Figure 2-8**. Schematic building designs and elevations of the proposed structures are shown in **Figures 2-9** through **2-15**. According to the schematic elevations, the height of the majority of the buildings would fall between 26 and 38 feet with one building reaching approximately 40 feet.

The proposed project includes implementation of a landscaping plan, which includes a variety of trees, shrubs, perennials and groundcover. The conceptual landscaping plan is shown in **Figure 2-16**. According to the preliminary landscaping plan, screening trees and shrubs are located along all exterior site boundaries while shade trees and evergreens are included in the parking areas. The main entrance to the project site along Woollomes Avenue includes a monument sign with palm tree groupings and perennials. This entranceway features more palm trees along the driveway leading to the central parking

area; other entrances also include perennial plantings. Garbage enclosures are screened by shrubs and vines.

Temporary structures associated with construction and development such as contractor's trailers, security trailers, portable toilets and concrete mixers would exist during site preparation and construction. Short-term aesthetic impacts are not expected to be significant.

As part of standard project approval, the proposed project will be subject to various requirements found in the *City of Delano Zoning Ordinance* regarding site plan and design review. These standards relate to such features as building placement, setbacks, access driveways, screening elements, signage, burial of utilities, landscaping and lighting and architectural elements. Revisions to the proposed project stipulated by the site and design review process will be incorporated into the final development plan as conditions of project approval.

Although the appearance of the project site will be altered, the change does not constitute a negative aesthetic impact or "sense of loss" of the existing visual character of the site in accordance with CEQA and will not result in significant inconsistency with the visual character of the surrounding area. The rural residential character would change, but the character is non-cohesive and does not contain any significant features that define an important part of the neighborhood or community. The project site has been designated by the *City of Delano General Plan* (City of Delano 2005) for commercial uses. Therefore, development of the proposed project would be consistent with the use planned for the project site by the City of Delano. The proposed project would also continue the pattern of commercial development established by the Home Depot store located across Woollomes Avenue to the north. The Home Depot location and the area bordering the project site on the west have also been designated for commercial uses by the *City of Delano General Plan* (City of Delano 2005). Therefore, the change in visual character would be considered a **less than significant impact.** No mitigation is required.

Light and Glare

Impact 3.1-3 The proposed project would introduce new sources of lighting that could adversely affect adjacent properties. The increased direct and residual light and glare is a **less than significant impact.**

The proposed project would result in the installation of new sources of light to an area that otherwise contains few light sources. These sources include street and parking lot lighting, storefront lights, security lighting and light generated by vehicles accessing the site. New light sources would result in a greater overall level of light at night, thus reducing night sky visibility and affecting the general character of the area. Nighttime spillover of glare and light may potentially affect the adjacent commercial properties to the north and east. The

nearest existing sensitive receptors include residential dwelling units that are located approximately 0.3 mile south and 0.5 mile west of the project site.

Section 20.12.80 of the *City of Delano Zoning Ordinance* requires that exterior lighting project downward and not create illumination that exceed half foot candles on any adjacent property, whether or not the illumination is from a direct or indirect light source. The site plan and design review process described above in **Impact 3.1-2** will ensure that the project's potential lighting impacts will be **less than significant**.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Visual Effect

Impact 3.1-4 The proposed project, combined with other similar projects in the area, may result in a cumulative aesthetic impact to the existing visual character of the project area. This effect is considered a **less than significant** impact.

No significant aesthetic impacts have been identified for the proposed project. The proposed project would extend the continued development of commercial land uses located to the north and east. The proposed project will not have an individual aesthetic impact; the proposed project in combination with other projects in the area will contribute to the cumulative aesthetic impact, but that cumulative change in community character is considered **less than significant**. Standard project and design review procedures as implemented by the City of Delano will provide guidance for any potential projects in order to prevent degradation of the visual character of the area. Therefore, the cumulative visual impact is considered to be **less than significant**. No mitigation is required.

REFERENCES/DOCUMENTATION

California Department of Transportation. Scenic Highway Program website. www.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm

City of Delano. *General Plan*. Adopted December 5, 2005.

City of Delano. *Notice of Preparation of a Draft Environmental Impact Report*. January 16, 2005.

City of Delano. *Zoning Ordinance*. April 19, 2004.

Governor's Office of Planning and Research, State of California. *Guidelines for Implementation of the California Environmental Quality Act,* as amended. 2005.

Section 3.2
Agricultural Resources

This section of the EIR describes the agricultural resources of the project site and discusses potential impacts focusing on the conversion of farmland; conflicts with Williamson Act contracts; and other changes that could result in conversion of adjacent farmland. This examination is based on the *City of Delano General Plan* (City of Delano 2005), the *Important Farmlands Map for Kern County* (California Department of Conservation 2002) and the *Soil Survey for Kern County, Western Part* (Natural Resources Conservation Service 1988).

3.2.1 ENVIRONMENTAL SETTING

REGIONAL SETTING

The City of Delano is located in the southern portion of California's agriculturally rich San Joaquin Valley, ten miles from the western foothills of the Sierra Nevada Mountains and approximately twenty-five miles from the Coast Ranges to the west. Due to the surrounding productive farmland and gentle topography, agriculture is a significant economic activity in the Delano region. The fertile soils of the area produce orchard and field harvests of grapes, plums, almonds and alfalfa, among others.

PROJECT SITE CHARACTERISTICS

The 45-acre project site is comprised primarily of fallow agricultural land. Rural residential uses and a few commercial uses that were present at the time of the site reconnaissance in January 2005 have since been demolished.

The majority of the project site is designated as "Commercial" in the *City of Delano General Plan* (City of Delano 2005). The northeast corner is designated as "Service Commercial" and the southeast corner is designated as "Industrial." The majority of the project site is zoned "CRC" (Community Retail Commercial) with a small portion zoned as "GC" (General Commercial) in the northeast corner, adjacent to the intersection of Woollomes Avenue and Garzoli Avenue. According to the Delano Development Code, agricultural uses are permitted subject to approval of a Conditional Use Permit application in the General Commercial zoning district.

According to the City of Delano (Memorandum from Mike McCabe, Senior Planner, January 19, 2006), there has been no crop cultivation at the project site for at least the past five years. In addition, the *City of Delano General Plan* (City of Delano 2005) states that agricultural uses in the City are limited to the exclusive agricultural zoning districts of Kern County. The project site is relatively level with an elevation of approximately 300 feet above mean sea level and slopes gently to the southwest. According to the *Soil Survey for Kern County, Western Part* (Natural Resources Conservation Service 1988), the project site is comprised of Wasco sandy loam on the northern portion of the site and Garces silt loam on the southern portion. Wasco sandy loam is a deep, well-drained soil found on recent

alluvial fans and flood plains, formed in alluvium derived dominantly from granitic rock. Permeability of the Wasco sandy loam soil is moderately rapid. Available water holding capacity is moderate, runoff is slow and the hazard of water erosion is slight. The Garces silt loam is a deep, well-drained, saline-alkali soil found on basin rims, also formed on alluvium derived dominantly from granitic rock. Permeability of the Garces silt loam soil is very low. Available water capacity is low to high, runoff is very slow and the hazard of water erosion is slight.

SURROUNDING LAND USES

Adjacent land uses include a Home Depot home improvement store located across Woollomes Avenue north of the project site; commercial properties, including an auto and truck stop and a tractor sales and service company (located between Garzoli Avenue and State Route 99) located east of the project site; and fallow agricultural land located south and west of the project site, outside the existing City limits in unincorporated Kern County. The agricultural land to the west is designated as "Commercial" in the *City of Delano General Plan* while agricultural land to the south is designated as "Industrial." Both of these agricultural areas are zoned as "A" (Exclusive Agriculture) by Kern County. The project site partially surrounds the Pioneer Restaurant, located near the northeast corner of the project site; however, the restaurant is not part of the project site.

FARMLAND CLASSIFICATIONS

Land Capability Classification

The Land Capability Classification (LCC) system is used by the US Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), to determine a soil's agricultural productivity. The LCC indicates the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops and the way they respond to management. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes. Soils are rated from Class I to Class VIII, with soils having the fewest limitations receiving the highest rating (Class I). The "prime" soil classification indicates the absence of soil limitations, which if present, would require the application of management techniques (e.g., drainage, leveling, special fertilizing practices) to enhance production. Specific subclasses are also utilized to further characterize soils. A general description of soil classification, as defined by the NRCS, is provided below in **Table 3.2-1, Land Capability Classification**.

TABLE 3.2-1
LAND CAPABILITY CLASSIFICATION

Class	Definition
I	Soils have few limitations that restrict their use.
II	Soils have moderate limitations that reduce the choice of plants, or that require special conservation practices.
III	Soils have severe limitations that reduce the choice of plants, require conservation practices, or both.
IV	Soils have very severe limitations that reduce the choice of plants, require very careful management, or both.
V	Soils are not likely to erode but have other limitations; impractical to remove soils that limit their use largely to pasture or range, woodland, or wildlife habitat.
VI	Soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture, or range, woodland, or wildlife habitat.
VII	Soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife habitat.
VIII	Soils and landforms have limitations that preclude their use for commercial plant production and restrict their use to recreation, wildlife habitat, or water supply, or to aesthetic purposes.

Source: USDA, Natural Resources Conservation Service

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) was established in 1982 by the State Department of Conservation (DOC) to continue the Important Farmland mapping efforts begun in 1975 by the NRCS. The intent of the NRCS was to produce agricultural resource maps based on soil quality and land use across the nation. As part of the nationwide agricultural land use mapping effort, the NRCS developed a series of definitions known as Land Inventory and Monitoring (LIM) criteria. The LIM criteria classified the land's suitability for agricultural production; suitability included both the physical and chemical characteristics of soils and the actual land use. Important Farmland Maps are derived from the NRCS soil survey maps using the LIM criteria.

Since 1980, the State of California has assisted the NRCS with completing its mapping in the state. The FMMP was created in the DOC to continue the mapping activity with a greater level of detail. The DOC applied a greater level of detail by modifying the LIM criteria for use in California. The LIM criteria in California 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 ground water table, flooding potential, rock fragment content and rooting depth.

Important Farmland Maps for California are compiled using the modified LIM criteria, as described above, and current land use information. The minimum mapping unit is ten acres unless otherwise specified. Units of land smaller than ten acres are incorporated into the surrounding classification. The Important Farmland Maps identify five agriculture-related categories plus two non-agriculture listings: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban Land, and Other Land. The *Important Farmlands Map of Kern County* (2002) classifies the proposed project site mostly as "Grazing Land" and the remainder as "Other Land". "Grazing Land" is suited for the grazing of livestock; "Other Land" includes land not included in any other mapping category, such as low density rural development.

3.2.2 REGULATORY SETTING

WILLIAMSON ACT

The California Land Conservation Act, otherwise known as the Williamson Act, was enacted by the State Legislature in 1965 as a means of preserving California's Prime agricultural lands from urbanization. Prime farmland under the Williamson Act includes land that qualifies as Class I and II under the NRCS classification of land. The Williamson Act involves voluntary contracts between landowners and a city or county in which they agree to retain their lands in agriculture or other open space uses for a minimum of ten years. In return for entering into this contract, the landowners receive property tax relief on the lands under contract. This relief is provided through the assessment of the lands based upon their income-producing value rather than their market value, which may be considerably higher. The contracts have a ten-year term, which are automatically renewed each year on a common anniversary date of January 1st unless they are cancelled or notice of non-renewal is given. If either party to a contract gives notice of non-renewal, the non-renewal process begins on the following anniversary with nine years remaining. During the remaining term of the contract after notice of non-renewal has been given, the property taxes increase gradually according to a formula that eventually brings them up to the same level as non-Williamson Act lands.

Currently, approximately seventy percent of the state's prime agricultural land is protected under this Act. Within Kern County, approximately 1,713,804 acres are currently under Williamson Act contracts. According to the Kern County Williamson Act Lands Map (DOC 2004), there are no Williamson Act contracts on the project site.

CITY OF DELANO GENERAL PLAN

Agricultural preservation and conversion issues are addressed in the Open Space and Conservation Element of the *City of Delano General Plan*, which contains the following objective and policy regarding consideration of agricultural impacts:

Objective To preserve prime farmland and farmland of statewide importance until logical and timely urban growth is appropriate.

Policy 4 The City shall give preference to new development projects that are proposed for non-prime agricultural soils.

3.2.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on CEQA Guidelines and other performance standards recognized by the City of Delano. For the purposes of this EIR, impacts are considered significant if the following would result from implementation of the proposed project:

1) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resource Agency, to non-agricultural use;
2) Conflict with existing zoning for agricultural use;
3) Conflict with a Williamson Act contract; and/or
4) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland to non-agricultural use.

METHODOLOGY

Evaluation of potential agricultural impacts is based on site reconnaissance, the *City of Delano General Plan* (City of Delano 2005), the *City of Delano Zoning Ordinance*, the *Important Farmlands Map for Kern County* (DOC 2002), the *Soil Survey for Kern County, Western Part* (NRCS 1988) and the applicant's project description and application materials.

PROJECT IMPACTS AND MITIGATION MEASURES

Conversion of Farmland

Impact 3.2-1 The proposed project would convert approximately 45 acres of land designated as "Grazing Land" and "Other Land" in the *Important Farmlands Map of Kern County* to urban uses. This considered a **less than significant** impact.

The project site is located within the Delano City limits and has a land use designation in the *City of Delano General Plan* of "Commercial," "Service Commercial," and "Industrial."

The majority of the project site is designated as "Commercial" in the *City of Delano General Plan* (City of Delano 2005). The majority of the project site is zoned "CRC" (Community Retail Commercial) with a small portion is zoned as "GC" (General Commercial) in the northeast corner, adjacent to the intersection of Woollomes Avenue and Garzoli Avenue. According to the Delano Development Code, agricultural uses are only permitted subject to approval of a Conditional Use Permit (CUP) application in the General Commercial zoning district. Development of the proposed project would result in the conversion of approximately 45 acres of fallow agricultural land, rural residential and limited commercial uses to a regional shopping center.

The *Soil Survey for Kern County, Western Part,* indicates that the project site is comprised of Wasco sandy loam on the northern portion of the site and Garces silt loam on the southern portion. The FMMP soil candidate listing for Prime Farmland and Farmland of Statewide Importance for Kern County indicates that Wasco sandy loam meets the physical and chemical criteria for Prime Farmland, if irrigated, and Garces silt loam is listed as meeting criteria for Farmland of Statewide Importance. However, the *Important Farmlands Map of Kern County* (DOC 2002) classifies the proposed project site as approximately 75 percent "Grazing" land and the remainder as "Other Land". The project site has not been irrigated or utilized for grazing land for many years and the existence of urban uses within its boundaries makes any future agricultural use unlikely. Therefore, conversion of the project site to commercial uses would result, therefore, in a **less than significant** impact to prime agricultural land.

Conflict with Zoning for Agricultural Use

The project site has a land use designation in the *City of Delano General Plan* (City of Delano 2005) that is a combination of "Commercial", "Service Commercial" and "Industrial." The project site is currently zoned a combination of "CRC" (Community Retail Commercial) and "GC" (General Commercial). A primary purpose of the "CRC" district is to provide suitable locations for commercial uses requiring large parcels and the primary purpose of the "GC" district is to provide sites for commercial uses that will serve a large segment of the population with a wide variety of retail, wholesale, service and office uses. The City of Delano has designated this location for commercial use in the *City of Delano General Plan* (City of Delano 2005); therefore, the proposed project would not conflict with zoning for agricultural use. **No impact** is expected.

Conflicts with Existing Williamson Act Contract

There are no Williamson Act contracts or conflicts with any other farmland conservation plans on the project site. Therefore, **no impact** is expected.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Conversion of Farmland

Impact 3.2-2 The proposed project would convert approximately 45 acres of land designated as "Grazing Land" and "Other Land" in the *Important Farmlands Map of Kern County* to urban uses and would not contribute to the cumulative loss of agricultural land in the region. This considered a **less than significant** cumulative impact.

The project site is located within the existing City limits of Delano and has been designated for urban uses by the *Delano General Plan* (City of Delano 2005). The proposed project would result in the conversion of land from fallow agricultural land, rural residential and limited commercial uses to a regional shopping center. The *Important Farmlands Map of Kern County* (DOC 2002) classifies the proposed project site mostly as "Grazing" land and the remainder as "Other Land." In addition, the City of Delano has identified agricultural land in the vicinity of the proposed project for planned urban uses. Adjacent land on the south has been designated as "Light Industrial" by the *City of Delano General Plan*; property to the northwest was recently annexed into the City and designated as "Community Retail Commercial"; and land adjacent on the west is designated for commercial and residential development, pending annexation into the City.

Therefore, the proposed project would not contribute to the conversion of prime agricultural land to urban uses. The proposed project's contribution to the cumulative loss of agricultural land in the region would be considered **less than significant** cumulative impact.

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Section 3.3
Air Quality

The air quality section of the RDEIR includes a summary of local and regional air quality conditions and an analysis of the potential air quality impacts associated with the proposed project. Mitigation measures are recommended as necessary to reduce significant adverse air quality impacts. The information contained within this section is based primarily on an air quality assessment prepared by AMBIENT Air Quality & Noise Consulting and from documents prepared by the San Joaquin Valley Air Pollution Control District (SJVAPCD), the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (ARB). Air quality modeling results, including the URBEMIS 2002 v.8.7, an air quality-modeling program released by California Air Resources Board; and the Caline4 model used for carbon monoxide (CO) concentrations are included in Appendix B of the RDEIR. The Hot Spot Analysis and Reporting Program (HARP) computer model was used, in coordination with the SJVAPCD, to calculate the chronic and acute hazard indices and carcinogenic risk associated with the proposed project. Due to its size, this modeling is available for review under separate cover at the City of Delano Community Development and Planning Department located at 1015 11th Avenue, Delano, CA 93216.

3.2.1 EXISTING CONDITIONS

REGIONAL AND LOCAL CONDITIONS

The project site is located in the San Joaquin Valley Air Basin (SJVAB), which is under the jurisdiction of the SJVAPCD. Existing air quality conditions in the SJVAB and the factors affecting air quality conditions in the basin are discussed below.

Topography, Meteorology, and Pollutant Dispersion

The dispersion of air pollution in an area is determined by such natural factors as topography, meteorology, and climate, coupled with atmospheric stability conditions and the presence of inversions. The factors affecting the dispersion of air pollution with respect to the SJVAB are discussed below.

Topography

The SJVAB occupies the southern half of the Central Valley. The Coast Ranges, which have an average elevation of 3,000 feet, are located on the western border of the SJVAB. The San Emigdio Mountains, which are part of the Coast Ranges, and the Tehachapi Mountains, which are part of the Sierra Nevada, are both located on the south side of the SJVAB. The Sierra Nevada forms the eastern border of the SJVAB. There is no topographic feature delineating the northern edge of the basin. The SJVAB is basically flat with a downward gradient in terrain to the northwest.

Meteorology and Climate

The climate of the SJVAB is strongly influenced by the presence of mountain ranges. The mountain ranges to the west and south induce winter storms from the Pacific Ocean to release precipitation on the western slopes producing a partial rain shadow over the valley. In addition, the mountain ranges block the free circulation of air to the east, trapping stable air in the valley for extended periods during the cooler half of the year.

Winter in the SJVAB is characterized as mild and fairly humid, and the summer is typically hot, dry, and cloudless. The climate is a result of the topography and the strength and location of a semi-permanent, subtropical high-pressure cell. During summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below to the surface as a result of the northwesterly flow produces a band of cold water off the California coast. In winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms.

The annual temperature, humidity, precipitation, and wind patterns reflect the topography of the SJVAB and the strength and location of the semipermanent, subtropical high-pressure cell. Summer temperatures that often exceed 100 degrees Fahrenheit (F) and clear sky conditions are favorable to ozone formation. Most of the precipitation in the valley occurs as rainfall during winter storms. The winds and unstable atmospheric conditions associated with the passage of winter storms result in periods of low air pollution and excellent visibility. However, between winter storms, high pressure and light winds lead to the creation of low-level temperature inversions and stable atmospheric conditions resulting in high carbon monoxide concentrations and particulate matter (PM) accumulation. The orientation of the wind flow pattern in the SJVAB is parallel to the valley and mountain ranges. Summer wind conditions promote the transport of ozone and precursors from the San Francisco Bay Area through the Carquinez Strait, a gap in the Coast Ranges, and low mountain passes such as Altamont Pass and Pacheco Pass.

The climate is semi-arid, with an annual normal precipitation of approximately 14 inches. Based on historical data obtained from nearby meteorological stations located in the project area, ambient temperatures range from an average minimum of 36 degrees Fahrenheit in January to an average maximum of 99 degrees Fahrenheit in July. Wind is predominantly from the west-northwest at 9 mph (WRCC 2006, ARB 1992).

Atmospheric Stability and Inversions

Stability describes the resistance of the atmosphere to vertical motion. The stability of the atmosphere is dependent on the vertical distribution of temperature with height. Stability categories range from "Extremely Unstable" (Class A), through Neutral (Class D), to

"Stable" (Class F). Unstable conditions often occur during daytime hours when solar heating warms the lower atmospheric layers sufficiently. Under Class A stability conditions, large fluctuations in horizontal wind direction occur coupled with large vertical mixing depths. Under Class B stability conditions, wind direction fluctuations and the vertical mixing depth are less pronounced because of a decrease in the amount of solar heating. Under Class C stability conditions, solar heating is weak along with horizontal and vertical fluctuations because of a combination of thermal and mechanical turbulence. Under Class D stability conditions, vertical motions are primarily generated by mechanical turbulence. Under Class E and Class F stability conditions, air pollution emitted into the atmosphere travels downwind with poor dispersion. The dispersive power of the atmosphere decreases with progression through the categories from A to F.

With respect to the SJVAB, Classes D through F are predominant during the late fall and winter because of cool temperatures and entrapment of cold air near the surface. March and August are transition months with equally occurring percentages of Class F and Class A. During the spring months of April and May and the summer months of June and July, Class A is predominant. The fall months of September, October, and November have comparable percentages of Class A and Class F.

An inversion is a layer of warmer air over a layer of cooler air. Inversions influence the mixing depth of the atmosphere, which is the vertical depth available for diluting air pollution near the ground, thus significantly affecting air quality conditions. The SJVAB experiences both surface-based and elevated inversions. The shallow surface-based inversions are present in the morning but are often broken by daytime heating of the air layers near the ground. The deep elevated inversions occur less frequently than the surface-based inversions but generally result in more severe stagnation. The surface-based inversions occur more frequently in the fall, and the stronger elevated inversions usually occur during December and January.

CRITERIA POLLUTANTS

Criteria pollutant characteristics, mechanisms of pollutant origination, and health effects for the criteria pollutants (i.e., those pollutants specifically regulated under the Federal Clean Air Act and/or the California Clean Air Act) and other pollutants of concern are described below. A summary of common sources, and associated effects of criteria pollutants are summarized in **Table 3.3-1, Criteria Air Pollutants**.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless toxic gas produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, biomass). CO is a primary pollutant, which means that it is emitted directly into the air (unlike secondary pollutants such as ozone that are formed by the reactions of other pollutants). CO levels

tend to be highest during the winter months when the meteorological conditions favor the accumulation of the pollutants. According to the EPA, this occurs when relatively low inversion levels trap pollutants near the ground and concentrate the CO (EPA 2007). Because CO is somewhat soluble in water, normal winter conditions of rainfall and fog can suppress CO conditions.

CO is essentially inert to plants and materials but can have significant effects on human health. CO gas enters the body through the lungs, dissolves in the blood, and replaces oxygen as an attachment to hemoglobin. This binding reduces available oxygen in the blood and; therefore, reduces oxygen delivery to the body's organs and tissues. Effects on humans range from slight headaches to nausea to death. Elevated levels of CO can also cause visual impairments, reduced manual dexterity, poor learning ability, reduced work capacity, and trouble performing complex tasks.

According to the Air Resources Board (ARB), the major sources of CO in the SJVAB portion of Kern County are on-road vehicles (contributing 58 percent of the total CO emissions), aircraft (nine percent), and off-road equipment (eight percent) (ARB 2006). Since most of the CO sources are the indirect result of urban development, most emissions and unhealthy CO levels occur in major urban areas.

Ozone

Ozone is what is known as a photochemical pollutant. Ozone is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between reactive organic gases ("ROG"), NO_x, and sunlight. ROG and NO_x are emitted from automobiles, solvents and fuel combustion, the sources of which are widespread throughout the SJVAB. In order to reduce ozone, it is necessary to control emissions of these ozone precursors. Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. A reduction of ozone precursors reduces ozone. Ozone is a regional pollutant and is generated over a large area and is transported and spread by the wind. The conditions conducive to the formation of ozone include extended periods of daylight (solar radiation) and hot temperatures. These conditions are prevalent during the summer when thermal inversions are most likely to occur. As a result, summertime conditions of long periods of daylight and hot temperatures form ozone in the greatest quantities. During the summer, thermal inversions trap ozone from dispersing vertically, and high concentrations of this pollutant are prevalent.

TABLE 3.3-1
CRITERIA AIR POLLUTANTS
SUMMARY OF COMMON SOURCES AND EFFECTS

Pollutant	Description	Sources	Health Effects	Welfare Effects
Carbon Monoxide	Colorless, odorless gas	Motor vehicle exhaust, indoor sources include kerosene wood-burning stoves	Headaches, reduced mental alertness, heart attack, cardio-vascular diseases, impaired fetal development, death.	Contribute to the formation of smog.
Sulfur Dioxide	Colorless gas that dissolves in water vapor to form acid, and interacts with other gases and particulates in the air	Coal-fired power plants, petroleum refineries, manufacture of sulfuric acid and smelting of ores containing sulfur	Eye irritation, wheezing, chest tightness, shortness of breath, lung damage.	Contribute to the formation of acid rain, visibility impairment, plant and water damage, aesthetic damage.
Nitrogen Dioxide	Reddish brown, highly reactive gas	Motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuels	Susceptibility to respiratory infections, irritation of the lung and respiratory symptoms (e.g., cough, chest pain, difficulty breathing).	Contribute to the formation of smog, acid rain, water quality deterioration, global warming, and visibility impairment.
Ozone	Gaseous pollutant when it is formed in the troposphere	Primarily vehicle exhaust. Formed from the combination of reactive organic gases and oxides of nitrogen in the presences of sunlight.	Eye and throat irritation, coughing, respiratory tract problems, asthma, lung damage.	Plant and ecosystem damage.
Lead	Metallic element	Metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ	Affects animal and plants, affects aquatic ecosystems.
Particulate Matter	Very small particles of dust, soot, or other matter, including tiny droplets of liquids	Diesel engines, power plants, industries, windblown dust, wood stoves.	Eye irritation, asthma, bronchitis, lung damage, cancer, heavy metal poisoning, cardiovascular effects.	Visibility impairment, atmospheric depo-sition, aesthetic damage, impaired plant photosynthesis.

Source: EPA 2006, ARB 2006, CAPCOA 2006

Health effects of ozone can include the following: respiratory system irritation, reduction of lung capacity, asthma aggravation, inflammation, and damage to lung cells, aggravated

cardiovascular disease, and permanent lung damage. The greatest health risk is to those who are more active outdoors during smoggy periods, such as children, athletes, and communities, and outdoor workers. Ozone also damages natural ecosystems such as forests and foothill damages agricultural crops and some man-made materials such as rubber, paint, and plastics.

Ozone is a secondary pollutant, thus is not emitted directly into the lower level of the atmosphere. The sources of ozone precursors (ROG and NO_X) are discussed above in the description of ozone as well as the discussions concerning ROG and NO_X in this RDEIR.

Oxides of Nitrogen

During combustion of fossil fuels, oxygen reacts with nitrogen to produce NO_X (NO, NO_2, NO_3, N_20, N_2O_3, N_20_4, and N_20_5). This occurs primarily in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Natural sources of oxides of nitrogen (NO_X) include lightning, soils, wildfires, stratospheric intrusion, and the oceans. Natural sources accounted for approximately seven percent of 1990 emissions of NO_X for the United States. Atmospheric deposition of NO_X occurs when atmospheric or airborne nitrogen is transferred to water, vegetation, soil, or other materials. Acid deposition involves the deposition of nitrogen and/or sulfur acidic compounds that can harm natural resources and materials. NO_X is also an ozone precursor. A precursor is defined as a directly emitted air contaminant that, when released into the atmosphere, forms or causes to be formed or contributes to the formation of a secondary air contaminant for which an Ambient Air Quality Standard has been adopted, or whose presence in the atmosphere will contribute to the violation of one or more Ambient Air Quality Standards. When NO_X and ROG are released in the atmosphere, they can chemically react with one another in the presence of sunlight to form ozone. NO_X can also be a precursor to PM_{10} and $PM_{2.5}$.

According to the EPA, the only form of NO_X that exists at a level high enough to cause public health concerns is nitrogen dioxide (NO_2) (EPA 1997). Nitrogen dioxide is a brown gas with a strong odor. NO_X can react with moisture, ammonia, and other compounds to form nitric acid and related particles. The main human health concerns of nitrogen dioxide include lung damage, increased incidence of chronic bronchitis, eye and mucus membrane damage, negative effects on the respiratory system, pulmonary dysfunction, and premature death. Small particles can penetrate deeply into the sensitive tissue of the lungs and can cause or worsen respiratory disease such as emphysema, asthma, and bronchitis, and can also aggravate existing heart disease (EPA 2007). Because NO_X is an ozone precursor, the health effects associated with ozone (as discussed above) are also indirect health effects associated with unhealthful levels of NO_X emissions.

According to the ARB, the major source of NO_X in the SJVAB portion of Kern County includes stationary source fuel combustion (i.e. cogeneration, oil and gas production,

manufacturing and industrial, food and agricultural processing, and service commercial), contributing 46 percent of the total emissions in 2005. On-road vehicles contributed 33 percent of the total emissions in 2005 (ARB 2006).

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfuric acid is formed from sulfur dioxide, which is an aerosol particle component that affects acid deposition. Sulfur oxides (SO_X) includes sulfur dioxide and sulfur trioxide (SO_3). Anthropogenic, or 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 ARB, the State regulatory agency charged with regulating air pollution in the State, demonstrates that sulfur dioxide levels in the State are well below the maximum standards (ARB 2006b, Pages 107, 408, and 409). 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}. Sulfates are a particulate formed through the photochemical oxidation of sulfur dioxide.

According to the EPA, Sulfur dioxide is a soluble gas; therefore, it can be absorbed in the mucous membranes of the respiratory tract and nose. Long-term exposure of high levels of sulfur dioxide can cause irritation of existing cardiovascular disease, respiratory illness, and changes in the defenses in the lungs. When people with asthma are exposed to high levels of sulfur dioxide for short periods of time during moderate activity, effects may include wheezing, chest tightness, or shortness of breath (EPA 2007b).

The ARB determined that the major sources of SO_X in Kern County are stationary source fuel production (66 percent of the total) and trains (19 percent) (ARB 2006).

Lead

Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. An aerosol is a collection of solid, liquid, or mixed-phase particles suspended in the air. Lead was first regulated as an air pollutant in 1976. Leaded gasoline was first marketed in 1923 and was used in motor vehicles until around 1970. The exclusion of lead from gasoline helped to decrease emissions of lead in the United States from 219,000 to 4,000 short tons per year between 1970 and 1997. Even though leaded gasoline has been phased out in most countries, some still use leaded gasoline. 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. The mechanisms

by which lead can be removed from the atmosphere (sinks) include deposition to soils, ice caps, and oceans, and inhalation.

Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. The more serious effects of lead poisoning include behavior disorders, mental retardation, and neurological impairment. Low levels of lead in fetuses and young children can result in nervous system damage, which can cause learning deficiencies and low IQs. Lead may also contribute to high blood pressure and heart disease.

Lead concentrations once exceeded the state and national air quality standards by a wide margin, but have not exceeded state or national air quality standards at any regular monitoring station since 1982. Lead is no longer an additive to normal gasoline, which is the main reason concentration of lead in the air is low. In 2005, the SJVAPCD estimated that approximately 25 tons per year of lead was emitted in the SJVAB (SJVAPCD 2005).

Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter is a generic term that defines a broad group of chemically and physically different particles (either liquid droplets or solids) that can exist over a wide range of sizes. Examples of atmospheric particles include those produced from combustion (diesel soot or fly ash), light produced (urban haze), sea spray produced (salt particles), and soil-like particles from re-suspended dust. In discussions of air pollution, particulate matter is typically divided up into two size categories: PM_{10} and $PM_{2.5}$ because of the adverse health effects associated with the smaller sized particles. PM_{10} refers to particulate matter that is 10 microns or less in diameter (1 micron is one-millionth of a meter, also known as micrometer. $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter. Soil dust consists of the minerals and organic material found in soil being lifted up into the air by winds. Fugitive dust is defined as "any solid particulate matter entrained in the ambient air which is caused by anthropogenic or natural activities which is emitted into the air without first passing through a stack or duct designed to control flow, including, but not limited to, emissions caused by movement of soil, vehicles, equipment, and windblown dust" (SJVAPCD 2006).

Particulate matter can be inhaled directly into the lungs where it can be absorbed into the bloodstream. It is a respiratory irritant and can cause direct pulmonary effects such as coughing, bronchitis, lung disease, respiratory illnesses, increased airway reactivity, and exacerbation of asthma. Particulate matter is also thought to have direct effects on the heart. Relatively recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Non-health effects include reduced visibility and soiling of property.

Particulate matter originates from a variety of stationary and mobile sources. 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 include particulate matter from highway vehicles and non-road vehicles and fugitive dust from paved and unpaved roads.

According to the ARB, the primary sources of anthropogenic (human caused) PM_{10} in the SJVAB portion of Kern County are unpaved road dust (19 percent), paved road dust (19 percent), and farming operations (19 percent). The primary sources of anthropogenic $PM_{2.5}$ in the SJVAB portion of Kern County include stationary fuel combustion (20 percent), farming operations (13 percent), and unpaved road dust (11percent) (ARB 2006). On road and off road vehicles also emit diesel exhaust, which is another source of $PM_{2.5}$, as discussed below.

Visibility Reducing Particles

Visibility Reducing Particles are suspended particulate matter that reduces visibility. Visibility is the distance through the air that can be seen without the use of instrumental assistance. The distance that can be seen is limited by the amount of gases and aerosol particles in the way. Looking up vertically into the sky, one can see a greater distance compared with looking across the horizon because there are fewer particles blocking the view. According to the EPA, without pollution effects in the western United States, a natural visual range is 140 miles, and in the eastern United States, the range would be 90 miles (EPA 1999). In 1999, the visibility range in the West was 33-90 miles and in the East 14-24 miles (EPA 1999). The EPA implemented a Regional Haze Rule in 1999 to attempt to protect visibility in 156 national parks and wilderness areas in the United States. The regulation requires States to establish goals for improving their areas and work together with other States as the pollution is often transported over long distances (EPA 1999).

Visibility Reducing Particles are generally considered the "soup" known as air pollution; the human health effects of Visibility Reducing Particles are those of the pollutants (particulate matter, oxides of nitrogen, and sulfur dioxide) discussed above.

Again, because Visibility Reducing Particles are generally considered the "soup" of air pollutants, the sources are other pollutants as discussed above.

Vinyl Chloride

Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) and vinyl products, including pipes, wire and cable coatings, and packaging materials. Vinyl chloride is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloroethylene are broken down. This can occur 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 due to microbial breakdown of chlorinated solvents. The standard was set at 0.01 ppm for a 24-hour duration because that was the lowest level that could be detected at that time. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.

Short-term exposure to high levels of vinyl chloride in air causes central nervous system effects, such as dizziness, drowsiness, and headaches (ARB 2005). 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.

According to the SJVAPCD's *2005 Annual Report on the District's Air Toxic Program*, approximately 8.66 tons per year of vinyl chloride was emitted in the SJVAB (SJVAPCD 2005). It should be noted that this project is not a source of vinyl chloride.

Hydrogen Sulfide

Hydrogen sulfide is a flammable, colorless, poisonous gas that smells like rotten eggs. High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause symptoms like headache, nausea, vomiting, and cough. Long exposure to hydrogen sulfide can cause pulmonary edema. Hydrogen sulfide and other reduced sulfur compounds form by the anaerobic decomposition of manure. Some types of bacteria found in animal and human by-products produce hydrogen sulfide during reduction of sulfur-containing compounds, such as proteins. Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide emissions. Anthropogenic sources include the combustion of sulfur containing fuels (oil and coal) and organic matter that undergoes putrefaction. It is used in the production of heavy water for nuclear reactors, the manufacture of chemicals, in metallurgy, and as an analytical reagent.

Reactive Organic Gases

Reactive organic gases (ROG), 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, which participates in atmospheric photochemical reactions. ROG consist of nonmethane hydrocarbons and oxygenated hydrocarbons. Hydrocarbons are organic compounds that contain only hydrogen and carbon atoms. Nonmethane hydrocarbons are hydrocarbons that do not contain the unreactive hydrocarbon, methane. Oxygenated hydrocarbons are hydrocarbons with oxygenated functional groups attached. There is no state or national ambient air quality standard for ROG because they are not classified as criteria pollutants. They are regulated, however, because a reduction in ROG emissions reduces certain chemical reactions that

contribute to the formulation of ozone. ROG are also transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.

According to the EPA, although health-based standards have not been established for ROG, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of ROG are suspected to cause eye, nose, and throat irritation; headaches, loss of coordination, nausea, damage to liver, kidney, and the central nervous system (EPA 2005). The major sources of ROG in Kern County (SJVAB portion) are oil and gas production (34 percent), on-road motor vehicles and solvent evaporation The major sources of total organic gases (TOG) in Kern County (SJVAB portion) are oil and gas production, farming operations, landfills (ARB 2006).

TOXIC AIR CONTAMINANTS

A toxic air contaminant or TAC is defined as an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts may not be expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the State and federal governments have set ambient air quality standards (ARB 2006).

Similar to the criteria pollutants, TACs are emitted from stationary sources, area-wide sources, and mobile sources. Emissions of selected TACs are reported on a statewide basis and for the ten highest-emitting counties in California. Emissions are also included for the five most populous air basins. Ambient concentrations and related health risks associated with the ten TACs of primary concern within the SJVAB, as defined by the ARB, are summarized in **Table 3.3-2, Summary of Toxic Air Contaminants within the San Joaquin Valley.** It is important to note, however, that the data presented in **Table 3.3-2, Summary of Toxic Air Contaminants within the San Joaquin Valley** represent average population exposures and may not represent the health risk near local sources. Localized impacts may involve exposure to different toxic air contaminants or to higher or lower concentrations than the average basin-wide concentrations and health risks identified in **Table 3.3-2, Summary of Toxic Air Contaminants within the San Joaquin Valley.**

As shown in **Table 3.3-2, Summary of Toxic Air Contaminants within the San Joaquin Valley**, the majority of the estimated health risk from TACs can be attributed to a relatively few compounds, the most important being PM from diesel-fueled engines (diesel particulate matter or diesel-exhaust PM). In addition to diesel-exhaust PM, benzene and 1,3-butadiene are also significant contributors to overall ambient public health risk within

the SJVAB. Additional TACs or primary concern within the State of California, as well as the SJVAB, include acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene. Together, these ten compounds pose the greatest known ambient risk based on air quality data, or concentration estimates in the case of diesel-exhaust PM. Other TACs may pose significant health risks, particularly at the local level. Physical properties and related health risks associated with the three most important TACs within the SJVAB, as defined by the ARB, are discussed in more detail, as follows: (ARB 2006).

Diesel-Exhaust Particulate Matter

Diesel particulate matter (DPM) is a source of $PM_{2.5}$ because the size of diesel particles are typically *2.5* microns and smaller. In 1998, DPM made up about 6 percent of the total inventory nationwide (EPA 2002). Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. DPM is a concern because many compounds found in diesel exhaust are carcinogenic, including 16 that are classified as possibly carcinogenic by the International Agency for Research on Cancer. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (EPA 2002).

Some short-term (acute) effects of diesel exhaust include eye, nose, throat and lung irritation, and can cause coughs, headaches, light-headedness, and nausea. According to the Office of Environmental Health Hazard Assessment, diesel exhaust is a major source of ambient particulate matter pollution as well, and numerous studies have linked elevated particle levels in the air to increased hospital admission, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Modeling conducted by ARB indicates that the cancer risk associated with DPM in the SJVAB is 390 excess cancer cases per million people exposed over a 70-year lifetime (ARB 2006b). Note that this is an average for the basin; therefore, the actual background cancer risk at the project may be higher or lower, depending on the impact of nearby sources.

TABLE 3.3-2
SUMMARY OF TOXIC AIR CONTAMINANTS WITHIN THE SAN JOAQUIN VALLEY

Toxic Air Contaminant	Annual Average Concentration and Health Risks					
	Conc.*/Risk**	2000	2001	2002	2003	2004
Acetaladeyde	Annual Avg	1.09	1.15	1.24	1.34	1.14
	Health Risk	5	6	6	7	6
Benzene	Annual Avg	0.63	0.538	0.552	0.463	0.372
	Health Risk	58	50	51	43	34
1,3-Butadiene	Annual Avg	0.158	0.15	0.146	0.095	0.08
	Health Risk	59	56	55	36	30
Carbon Tetrachloride	Annual Avg	0.096	0.086	0.091	0.097	--
	Health Risk	25	23	24	26	--
Chromium, Hexavalent	Annual Avg	0.12	--	0.086	0.078	0.083
	Health Risk	18	--	13	12	13
Para-Dichlorobenzene	Annual Avg	0.11	0.13	0.15	0.15	0.15
	Health Risk	7	9	10	10	10
Formaldehyde	Annual Avg	2.61	3.08	3.13	3.02	2.27
	Health Risk	19	23	23	22	17
Methylene Chloride	Annual Avg	0.53	0.27	0.16	0.14	0.11
	Health Risk	2	<1	<1	<1	<1
Perchloroethylene	Annual Avg	0.076	0.052	0.039	0.033	0.027
	Health Risk	3	2	2	1	1
Diesel PM***	Annual Avg	(1.3)				
	Health Risk	(390)				
Average Basin	Health Risk	196	169	184	157	111

Source: ARB 2006

Notes:
* Concentrations for Hexavalent Chromium are expressed in ng/m3, and concentrations for DPM are expressed as ug/m3. Concentrations for all other TACs are expressed as ppb.
** Health Risk represents the number of excess cancer cases per million people based on a lifetime (70-year) exposure to the annual average concentration. Total Health Risk represents only those compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and/or health risk information are not available.
*** The Diesel PM concentrations are estimates based on receptor modeling. Because data are not available for all years, Diesel PM is not included in the Average Basin Health Risk number.

In 2005, the SJVAPCD estimated that approximately 4,124 tons per year of DPM was emitted in the SJVAB (SJVAPCD 2005). In the Kern County portion of SJVAB, it was estimated that 726 tons per year was emitted (ARB 2006). DPM in the SJVAB poses the greatest cancer risk of all the toxic air pollutants.

Benzene

Benzene is highly carcinogenic and occurs throughout California. The ARB identified benzene as a TAC in January 1985 under California's TAC program (Assembly Bill 1807). In addition to being a carcinogen, benzene also has non-cancer health impacts. Brief inhalation exposure to high concentrations can cause central nervous system depression. Acute effects include central nervous system symptoms of nausea, tremors, drowsiness, dizziness, headache, intoxication, and unconsciousness.

Current estimates show that approximately 85 percent of the benzene emitted in California comes from motor vehicles, including evaporative leakage and unburned fuel exhaust. The predominant sources of total benzene emissions in the atmosphere are gasoline fugitive emissions and gasoline motor vehicle exhaust. Approximately 49 percent of the statewide benzene emissions can be attributed to on-road motor vehicles, with an additional 36 percent attributed to other mobile sources such as recreational boats, off-road recreational vehicles, and lawn and garden equipment. Currently, the benzene content of gasoline is less than one percent. Some of the benzene in the fuel is emitted from vehicles as unburned fuel. Benzene is also formed as a partial combustion product of larger aromatic fuel components. Industry-related stationary sources contribute 13 percent and area-wide sources contribute one percent of the statewide benzene emissions. The primary stationary sources of reported benzene emissions are crude petroleum and natural gas mining, petroleum refining, and electric generation. The primary area-wide sources include residential combustion of various types such as cooking and water heating. The primary natural sources are petroleum seeps that form where oil or natural gas emerge from subsurface sources to the ground or water surface.

1,3-Butadiene

The ARB identified 1,3-butadiene as a TAC in 1992. In California, 1,3-butadiene has been identified as a carcinogen. In addition, 1,3-butadiene vapors are mildly irritating to the eyes and mucous membranes and cause neurological effects at very high levels. Most of the emissions of 1,3-butadiene are from incomplete combustion of gasoline and diesel fuels. Mobile sources account for approximately 85 percent of the total statewide emissions. Vehicles that are not equipped with functioning exhaust catalysts emit greater amounts of 1,3-butadiene than vehicles with functioning catalysts. Approximately 45 percent of the statewide 1,3-butadiene emissions can be attributed to on-road motor vehicles, with an additional 40 percent attributed to other mobile sources such as recreational boats, off-road recreational vehicles, and aircraft. Area-wide sources such as agricultural waste burning and open burning associated with forest management contribute approximately 15 percent. Stationary sources contribute less than one percent of the statewide 1,3-butadiene emissions. The primary stationary sources with reported 1,3-butadiene emissions include

petroleum refining, manufacturing of synthetics and man-made materials, and oil and gas extraction. The primary natural sources are wildfires.

3.2.2 REGULATORY SETTING

Air quality within the SJVAB is regulated by several jurisdictions including the United States EPA, California Air Resources Board (ARB), and the SJVAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent.

Pollutants subject to federal ambient standards are referred to as "criteria" pollutants because the EPA publishes criteria documents to justify the choice of standards. One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term “sensitive receptors” refers to specific population groups, as well as the land uses where they would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses are residences, schools, playgrounds, childcare centers, retirement homes or convalescent homes, hospitals, and clinics. The federal and state standards for the criteria pollutants and other state regulated air pollutants are shown in **Table 3.3-3, Summary of Ambient Air Quality Standards**.

FEDERAL AIR QUALITY REGULATIONS

At the federal level, the EPA has been charged with implementing national air quality programs. The EPA’s air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

The FCAA required the EPA to establish National Ambient Air Quality Standards (NAAQS), and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions.

TABLE 3.3-3
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards [a, c]	National Standards [b, c]	
			Primary [d]	Secondary [e]
Ozone (O_3)	1-hour	0.09 ppm (180 μg/m^3)	- -	Same as Primary
	8-hour	0.070 ppm (137 μg/m^3)	0.08 ppm (157 μg/m^3)	
Particulate Matter (PM_{10})	AAM	20 μg/m^3	(Revoked)[f]	
	24-hour	50 μg/m^3	150 μg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 μg/m^3	15 μg/m^3	
	24-hour	No Standard	35 μg/m^3 [f]	
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	None
	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	
	8-hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	
Nitrogen Dioxide (NO_2) [g]	AAM	0.030 ppm (56 μg/m^3)	0.053 ppm (100 μg/m^3)	Same as Primary
	1-hour	0.18 ppm (338 μg/m^3)	–	
Sulfur Dioxide (SO_2)	AAM	–	0.03 ppm (80 μg/m^3)	–
	24-hour	0.04 ppm (105 μg/m^3)	0.14 ppm (365 μg/m^3)	–
	3-hour	–	–	0.5 ppm (1,300 μg/m^3)
	1-hour	0.25 ppm (655 μg/m^3)	–	–
Lead	30-day Average	1.5 μg/m^3	–	–
	Calendar Quarter	–	1.5 μg/m^3	Same as Primary
Sulfates	24-hour	25 μg/m^3	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 μg/m^3)		
Vinyl Chloride	24-hour	0.01 ppm (26 μg/m^3)		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient of 0.23 per kilometer — visibility of 10 miles or more (0.07—30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.		

Source: ARB 2007; US EPA 2006

[a] California standards for O_3, CO (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, PM (PM_{10} and $PM_{2.5}$), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b] National standards (other than O_3, PM, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year

with a 24-hour average concentration above 150 μg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of daily concentrations, average over three years, are equal to or less than the standard.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25EC and a reference pressure of 760 torr.

[d] The levels of air quality necessary to protect the public health.

[e] The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[f] Based on revised particulate standards adopted by the EPA on September 21, 2006. Due to lack of evidence linking health problems to long-term exposure to coarse particulate pollution, the EPA has revoked the annual PM_{10}.

[g] The CAAQS for Nitrogen Dioxide was amended on February 22, 2007, to lower the 1-hr standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. These changes become effective after regulatory changes are submitted and approved by the Office of Administrative Law, expected in late 2007.

AAM = Annual Arithmetic Mean

STATE AIR QUALITY REGULATIONS

The California Clean Air Act (CCAA), 1988, requires that all air districts in the state endeavor to achieve and maintain California Ambient Air Quality Standards (CAAQS) for O3, CO, SO2, and nitrogen dioxide (NO2) by the earliest practical date. Plans for attaining CAAQS were to be submitted to ARB by June 30, 1991. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a 5-percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA of 1988. The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for O_3, CO, SO_2, and nitrogen dioxide (NO_2) by the earliest practical date. Each district plan is to achieve a 5-percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. Any additional development within the region obviously would impede the reduction goals of the CCAA.

Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing CAAQS (which in many cases are more stringent than the NAAQS), and setting emissions standards for new motor vehicles. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT REGULATIONS

The SJVAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the San Joaquin Valley

Air Basin (SJVAB), within which the project is located. Responsibilities of the SJVAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the federal Clean Air Act (CAA) and the California Clean Air Act (CCAA). In an attempt to achieve NAAQS and CAAQS and maintain air quality, the SJVAPCD has recently completed the following air quality attainment plans and reports: *2004 Extreme Ozone Attainment Demonstration Plan*, *2003 PM_{10} Attainment Demonstration Plan*, *2002-2005 Amended Ozone Rate of Progress Plan*, *2000 Ozone Rate of Progress Report*, *2001 Update to Ozone Attainment Demonstration Plan, 1997-1999 PM_{10} Progress Report,* and the *2003 PM_{10} Plan*. In coordination with the ARB and other north/central California air districts, the SJVAPCD has begun development of the *8-hour Ozone Attainment Demonstration Plan*.

Attainment Plans

For purposes of reaching attainment of the state and national air quality standards, the SJVAPCD adopted the *Extreme Ozone Attainment Demonstration Plan* and the 2003 PM_{10} Plan. ARB has approved both plans; however, the EPA approved the 2003 PM_{10} Plan but has not acted on the *Extreme Ozone Attainment Demonstration Plan*.

Ozone

The *Extreme Ozone Attainment Demonstration Plan* was prepared and approved by the SJVAPCD in 2004 to fulfill the requirements of the Clean Air Act to attain the national 1-hour ozone ambient air quality standards in the SJVAB by November 15, 2010. EPA revoked the national 1-hour standard on June 15, 2005; however, many of the requirements of the adopted Extreme OADP remain in effect. The SJVAPCD and ARB must continue to implement control measures contained in the *Extreme Ozone Attainment Demonstration Plan* to achieve the needed emission reductions. Since its adoption, the SJVAPCD has implemented many of the control measures listed in the *Extreme Ozone Attainment Demonstration Plan* as rules and rule amendments. The *Extreme Ozone Attainment Demonstration Plan* control measures and associated emission reductions will be used as part of the SJVAPCD 's plan to attain the new, more stringent, 8-hour ozone standard due June 15, 2007.

The SJVAPCD recently completed the Proposed 2007 Ozone Plan. The Proposed 2007 Ozone Plan is out for public review and is anticipated to go to the District's Governing Board on April 30, 2007. The Proposed 2007 Ozone Plan would then be presented to ARB for approval. Once approved, the 2007 Ozone Plan would be sent to the EPA.

The draft 2007 Ozone Plan indicates that a 60 percent reduction in NOx and VOC emissions are necessary to bring the SJVAB into attainment of the 8 hour ozone NAAQS. Based on the projected 2012 emissions inventory, this equates to 480 tons per day reductions in emissions. The draft draft 2007 Ozone Plan states that for the SJVAB, "modeling shows that NOx reductions are preferred and are essential to meeting the new 8-hour ozone and $PM_{2.5}$ standards" (Page ES-7 of SJVAPCD 2006g). To achieve these reductions, the Plan has the following strategies: new and more stringent rules and regulations for stationary sources; realized reductions from strategies adopted after May 2005; new and more stringent tail-pipe emission standards for mobile sources (under development by the CARE); emission standards for locomotives (EPA will adopt in 2011); local regulations and voluntary measures to reduce and/or mitigate mobile source emissions; incentive based measures; and alternative compliance programs.

Voluntary measures to reduce and/or mitigate mobile source emissions, which is an emission reduction strategy, are included in the in draft 2007 Ozone Plan. These measures include possible enhancements to the SJVAPCD's Indirect Source Review Rule and other initiatives to reduce vehicle miles traveled through enhanced land use practices. Also included are measures to promote green contracting and enhanced voluntary programs such as Spare the Air to promote the public to take steps to protect theft air quality. The SJVAPCD estimates that this particular measure will reduce emissions by 3 to 4 tons per day of NOx and one ton per day of ROG emissions.

PM_{10}

The EPA approved a determination that the SJVAB has attained the federal PM_{10} standards on October 30, 2006, well before the projected 2010 attainment date. In order to be officially redesignated as attainment for PM_{10}, the SJVAPCD must submit and the U.S. EPA must approve a maintenance plan that ensures the air basin will continue to achieve the standards in the future. Until that is accomplished, all requirements applicable to serious PM_{10} nonattainment areas remain in effect except for the need for contingency measures.

There are several mandated actions that nonattaimnent areas must do to meet the requirements of the FCAA. States with PM_{10} nonattainment areas must incorporate into their SIPs provisions with lower operating permit thresholds for the construction and operation of new and modified major stationary sources of PM_{10}. Another requirement for nonattainment PM_{10} areas is to establish attainment dates no more than three years apart and report them to the EPA. The SJVAPCD prepared a 2003 PM_{10} Plan for incorporation into the SIP and to meet the requirements of the FCAA. The goal of the 2003 PM_{10} Plan is for the SJVAB to achieve the NAAQS for PM_{10} by December 31, 2010. The Plan is designed to meet the requirements of the federal Clean Air Act and contains measures needed to attain the NAAQS at the earliest possible date. The 2003 PM_{10} Plan proposes many different types of control strategies for PM_{10}. According to the 2003 PM_{10} Plan, the

control strategies are a collective effort between the EPA, CARE, the SJVAPCD, and local government agencies. ARB and the EPA have approved the 2003 PM_{10} Plan. The 2003 PM_{10} Plan contained a commitment to submit a mid-course review as part of the Reasonable Further Progress Report due in 2006. The review was intended to incorporate findings of the California Regional Particulate Air Quality Study and to revise the Plan's control strategy if warranted by the science. A 2006 PM_{10} Plan was prepared, which provides updated information and evaluation required by EPA' s Federal Register approval notice for the 2003 PM_{10} Plan. The SJVAPCD approved the 2006 PM_{10} Plan on February 16, 2006. The 2006 PM_{10} reaffirms the control strategy and the science described in the 2003 PM_{10} Plan regarding reducing only NOx and not ammonia to control the secondary particulate ammonium nitrate and addresses other atmospheric modeling issues. The 2006 PM_{10} Plan has been forwarded to CARB.

$PM_{2.5}$.

An attainment plan for PM2.5 is due to the EPA in April 2008, however no specific information regarding this plan has been published by the SJVAPCD. This plan will include measures intended to attain the NAAQS by the earliest possible date. The plan will outline regulatory approaches and control strategies tailored to the emissions inventory for the SJAB.

SJVAPCD Rules and Regulations

The SJVAPCD has also adopted various Rules and Regulations for the control of stationary and area sources of emissions. Regulations applicable to the proposed project are summarized, as follows:

- *Regulation IV (Prohibitions), Rule 4001. New Source Performance Standards*. This rule establishes standards, criteria, and operational/reporting requirements for all new sources of air pollution, as well as modifications of existing sources of air pollution.

- *Regulation IV (Prohibitions), Rule 4102. Nuisance*. The purpose of this rule is to protect the health and safety of the public from source operations which emit or may emit air contaminants or other materials. In accordance with this rule, emissions of air contaminants or other materials which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public would be prohibited.

- *Regulation VIII (Fugitive PM_{10} Prohibitions), Rules 8021-8071. Fugitive PM_{10} Prohibitions*. The purpose of these rules is to limit airborne particulate emissions associated with construction, demolition, excavation, extraction and other earthmoving activities, as well as open disturbed areas of land, and emissions

associated with paved and unpaved roads. Accordingly, these rules include specific measures to be employed to prevent and reduce fugitive dust emissions from anthropogenic (man-made) sources.

- *Regulation IX (Mobile and Indirest Sources), Rule 9510. Indirect Source Review.* The SJVAPCD's Indirect Source Review (ISR) Rule is the result of state requirements outlined in the California Health and Safety Code, Section 40604 and the State Implementation Plan (SIP). The SJVAPCD's SIP commitments are contained in the District's 2003 PM_{10} Plan and Extreme Ozone Attainment Demonstration Plan (Plans), which identify the need to reduce PM_{10} and NO_X in order to reach the ambient air-pollution standards on schedule. The Plans quantify the reduction from current District rules and proposed rules, as well as state and federal regulations, and then model future emissions to determine if the District may reach attainment for applicable pollutants. The ISR is one of the commitments contained in the 2003 PM_{10} Plan to meet these requirements. The ISR is also designed to attain NAAQS for ozone by November 15, 2010.

  - The SJVAPCD's ISR Rule will reduce emissions of NO_X and PM_{10} from new development projects that attract or generate motor vehicle trips. In general, new development contributes to the air-pollution problem in the Valley by increasing the number of vehicles and vehicle miles traveled. Although newer, cleaner technology is reducing the per-vehicle pollution, the emissions increase from new development putting more vehicles on Valley roads partially offsets the emission reductions gained from technology advances.

  - ISR applies to larger development projects that have not yet gained discretionary approval. A discretionary permit is a permit from a public agency, such as a city or county, which requires some amount of deliberation by that agency, including the potential to require modifications or conditions on the project. In accordance with this rule, developers of larger residential, commercial and industrial projects are required to reduce smog-forming NO_X and PM_{10} emissions from their projects' baselines as follows: 20 percent of construction NO_x exhaust; 45 percent of construction PM_{10} exhaust; 33 percent of operational NO_x over 10 years; 50 percent of operational PM_{10} over 10 years. This reduction is intended to be achieved through incorporation of on-site reduction measures. If, after implementation of on-site emissions reduction measures, project emissions still exceed the minimum baseline reductions, the ISR requires a project's developer willpay an off-site fee to the District, which would then be used to fund clean-air projects within the air basin. The fees collected would be placed into a mitigation fund for each pollutant and county, and expended on projects that

reduce emissions of that pollutant in the county, utilizing a grant-like program. The District has over eleven years of experience with grant programs designed primarily to reduce NO_x and some of the CO. Each grant program has strict guidelines on emission reduction, qualifying equipment, and related administration of the program. Based on that experience, the District has decided that the grant program provides the most cost effective emission reduction for the money that will be collected. Pursuant to the ISR, the District will be obligated to spend fees collected for emission reduction programs only on such programs.

Toxic Air Contaminants

Toxic air contaminants (TACs) are regulated through implementation of federal and state laws. Federal law uses the term "hazardous air pollutants" (HAPs) to refer to the same types of compounds considered as TACs under state law. Both terms encompass essentially the same compounds. For purposes of this report, the term "TACs" will be used when referring to these pollutants. It is important to note that TACs are not considered criteria pollutants in that the federal and California Clean Air Acts do not address them specifically through the setting of NAAQS or CAAQS. However, enforcement of the NAAQS and CAAQS for the control of criteria pollutants, such as ozone and PM, can result in reducing airborne emissions of TACs. For example, controls on volatile organic compound emissions to attain the ozone standard can significantly reduce emissions of TACs from stationary sources. The following is a summary of the major current federal and state regulations and programs for controlling TACs.

Federal HAP/TAC Program

Title III of the CAA requires the EPA to promulgate National Emissions Standards for Hazardous Air Pollutants (NESHAP) for certain categories of sources that emit one or more pollutants identified as HAPs/TACs. Emission standards may differ between "major sources" and "area sources" of TACs. Major sources are defined as stationary sources with potential to emit more than 10 tons per year (TPY) of any TAC or more than 25 TPY of any combination of TACs; all other sources are considered area sources. Promulgation of the emission standards involves two phases. In the first phase (1992–2000), the U.S. EPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring Maximum Achievable Control Technology. For area sources, the standards may be different, based on generally available control technology. In the second phase (2001–2008), the U.S. EPA is required to promulgate health risk–based emissions standards where such standards are deemed necessary to address risks remaining after implementation of the technology-based NESHAP standards.

The 1990 amendments to the CAA required the EPA to promulgate vehicle or fuel standards containing reasonable requirements to control toxic emissions, applying at a minimum to benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1, 3-butadiene. In addition, Section 219 of the CAA also required the use of reformulated gasoline in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions, including toxics.

State and Local TAC Programs

The ARB works in partnership with the local air districts to enforce regulations that reduce TACs in the state. It has authority for motor vehicles, fuels, and consumer products. The ARB identifies the TACs, researches prevention or reduction methods, adopts standards for control, and enforces the standards. The local air districts have the authority over stationary or industrial type sources. SJVAPCD Rule 2010 requires permits for all source operations that may emit TACs. All projects that require air quality permits from the SJVAPCD are evaluated for TAC emissions (SJVAPCD 1998). The SJVAPCD limits emissions and public exposure to TACs through a number of programs. The SJVAPCD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. It requires a comprehensive health risk assessment for facilities that are put in the significant risk category under the Assembly Bill (AB) 2588 Program (Air Toxics "Hot Spot" Information and Assessment Act of 1987).

The ARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC in August 1998. Diesel PM is currently the ARB's primary TAC of concern for mobile sources, in part because, of all controlled TACs, diesel PM emissions are estimated to be responsible for approximately 70 percent of the total ambient TAC risk (ARB 2000). In 2000, the ARB developed and approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* and the *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines*. The ARB is now implementing an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles (ARB 2002) and is currently developing regulations designed to reduce diesel PM emissions from diesel-fueled engines and vehicles. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce diesel PM emissions. These regulations require substantial reductions in diesel PM emissions beginning with the 2004 model year. Additional more stringent standards will apply to engines starting in the 2007 model year. Off-road vehicles will come under more stringent regulation beginning with the 2005 model year. Each of these sets of regulations will serve to significantly reduce diesel PM emissions and long-term human health risks attributable to diesel-fueled vehicles and equipment.

The California State Legislature has also examined TAC hazards and has adopted several bills to control TACs. Implementation of state-adopted legislation pertaining to the control of TACs is the responsibility of the ARB and local air pollution control districts. The most important legislation applicable to the proposed project is summarized below.

The Tanner Toxics Act

The Tanner Toxics Act established the California toxic air contaminant control program (AB 1807, Health and Safety Code Section 39666 et seq.) to identify and control TACs. Under the act, the ARB is required to identify a substance as a TAC based on the review of the scientific data and the recommendations by both the Office of Environmental and Health Hazard Assessment and the Scientific Review Panel. After designation, the ARB investigates appropriate measures to limit emissions of the TACs. These measures may include emission limitations, control technologies, operation and maintenance requirements, closed-system engineering, cost, or substitution of compounds. The ARB then prepares a report on the appropriate degree of regulation and adopts Air Toxics Control Measures. These control measures are the minimum regulations that must be imposed by each of the local air districts in the form of regulations. Districts must adopt rules that are at least as stringent as those of the state.

Air Toxics "Hot Spots" Information and Assessment Act

The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) is a state law enacted in 1987. The law requires certain facilities to submit information regarding emissions of more than 550 TACs to their local air pollution control districts. The act addresses public concerns that emissions from individual facilities might cause local concentration of air toxics "hot spots" at a level where individuals may be exposed to an excess risk of adverse health effects. The program requires facilities to notify all exposed persons if it is determined that there is a significant health risk. AB 2588 was amended in 1993 by Senate Bill (SB) 1731, the Facility Toxic Air Contaminant Risk Reduction Audit and Plan. In accordance with SB 1731, local air districts are required to establish a program to reduce risks from existing facilities that are deemed to pose a significant health risk.

Odors

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and the SJVAPCD. The SJVAPCD has determined some common types of facilities that have been known to produce odors, including wastewater treatment facilities, chemical manufacturing plants, painting/coating operations, feed lots/dairies, composting facilities, landfills, and transfer stations. Because offensive odors rarely cause any physical harm and no requirements for their control are included in state or federal air

quality regulations, the SJVAPCD has no rules or standards related to odor emissions other than its nuisance rule. Any actions related to odors are based on citizen complaints to local governments and the SJVAPCD (SJVAPCD 1998).

Two situations increase the potential for odor problems. The first occurs when a new odor source is located near existing sensitive receptors. The second occurs when new sensitive receptors are developed near existing sources of odor. In the first situation, the SJVAPCD recommends operational changes, add-on controls, process changes, or buffer zones where feasible to address odor complaints. In the second situation, the potential conflict is considered significant if the project site is at least as close as any other site that has already experienced significant odor problems related to the odor source. For projects locating near a source of odors where there is no nearby development that may have filed complaints, and for odor sources locating near existing sensitive receptors, the SJVAPCD requires the determination of potential conflict to be based on the distance and frequency at which odor complaints from the public have occurred in the vicinity of a similar facility (SJVAPCD 1998).

Climate Change

The earth's climate has been warming for the past century. It is believed that this warming trend is related to the release of certain gases into the atmosphere. The greenhouse gases (GHG) include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and hydrofluorocarbons. Greenhouse gases absorb infrared energy that would otherwise escape from the earth. As the infrared energy is absorbed, the air surrounding the earth is heated. An overall warming trend has been recorded since the late 19th century, with the most rapid warming occurring over the past two decades. The ten warmest years of the last century all occurred within the last 15 years. It appears that the decade of the 1990s was the warmest in human history. Human activities have been attributed to an increase in the atmospheric abundance of greenhouse gases. There are uncertainties as to exactly what the climate changes will be in various local areas of the earth, and what the effects of clouds will be in determining the rate at which the mean temperature will increase. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, air pollution episodes, and the consequence of these effects on the economy (ARB 2004, 2006b).

Regulation

In 1988, the United Nations established the Intergovernmental Panel on Climate Change ("IPCC") to evaluate the impacts of global warming and to develop strategies the nation could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations Framework Convention on

Climate Change (UNFCCC) Agreement with the goal of controlling greenhouse gas emissions. As a result, the Climate Change Action Plan was developed to address the reduction of greenhouse gases in the United States. The plan consists of more than 50 voluntary programs.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere – chlorofluorocarbons (CFC's), hallons, carbon tetrachloride, methyl chloroform – were to be phased out by 2000. California Code of Regulations Title 24, Part 6, enacted in 1978, established energy efficiency standards for residential and nonresidential buildings in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation in new energy efficiency technologies and methods. The latest amendments occurred in October 2005. The science of global climate change is evolving and remains subject to extensive debate and uncertainties. Currently, there is a significant of uncertainty surrounding the correlation between greenhouse gas emissions and global warming. The National Academy of Sciences, private, non-profit, society of distinguished scholars engaged in scientific research, and operating under a Congressional Charter, prepared an in-depth study of the impact of increased greenhouse gas emissions. In a 2001 report entitled, *Climate Change Science: An Analysis of Some Key Questions*, the Academy concluded that a causal link between greenhouse gas emissions and global warming cannot unequivocally be established. The report noted that the Earth regularly experiences climatic cycles of global warming and cooling. Although the last 150 years has seen a rise in concentrations of greenhouse gases in the atmosphere, such increases do not always correspond to a rising global temperature. For example, carbon dioxide levels increased between 1946 and 1975, but global temperatures decreased during that same time span. In conclusion, predicting future climate change necessarily involves a complex web of economic and physical factors which are imprecise at best.

Currently, because of perceived scientific debate and uncertainties, and because of articulated regulatory impediments, the United States EPA does not regulate greenhouse gas pollutants resulting from motor vehicle emissions, those pollutants that are alleged to contribute significantly to global warming. However, recently the United States Supreme Court in the case of *Massachusetts v. The Environmental Protection Agency*, the Supreme Court held that the EPA had a mandatory duty to enact rules regulating mobile emissions of greenhouse gas pursuant to the Federal Clean Air Act. The Court held that greenhouse gases do fit the definition of an air pollutant which causes and contributes to air pollution which may reasonably be anticipated to endanger public health or welfare. Accordingly, it appears that in the near future, the United States Federal Government through the EPA will promulgate regulations pertaining to emissions of greenhouse gases under the authority of the Federal Clean Air Act.

Although the Federal Government has not regulated emissions of greenhouse gases, the State of California has been proactive in studying the impacts of climate change. The following are summaries of the pertinent State legislation dealing with global climate change:

Assembly Bill 4420 (AB 4420)

The State of California has been studying the impacts of climate change since 1988, when AB 4420 was approved. This legislation directed the California Energy Commission, in consultation with the Air Resources Board and other agencies, to study the implications of global warming on California's environment, economy, and water supply. The Energy Commission was also directed to prepare and maintain the state's inventory of greenhouse gas (GHG) emissions. That bill directed the ARB to adopt regulations to achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles. ARB staff's proposal implementing these regulations was approved by the Air Resources Board in September, 2004. With implementation, the average reduction of greenhouse gases from new California cars and light trucks will be about 22 percent in 2012 and about 30 percent in 2016, compared to today's vehicles (ARB 2005, 2006).

Assembly Bill 1493 (AB 1493)

California Assembly Bill 1493 Vehicular Emissions: Greenhouse Gases, signed into law on July 22, 2002, required that the ARB to develop and adopt regulations that achieve the maximum feasible and cost effective reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks. In response, ARB adopted landmark regulations in 2004 limiting greenhouse gas emissions from new vehicles sold in California beginning in the 2009 model year. New vehicles complying with this regulation will consume 30 percent less fuel than vehicles built prior to 2009. Assuming these regulations are not overturned in the courts, they could result in significant reductions in the demand for transportation fuel in California.

Assembly Bill 32 (AB 32)

Most recently, California adopted AB32, the Global Warming Solutions Act of 2006. AB 32 codifies the state's goal by requiring that the state's global warming emissions be reduced to 1990 levels by 2020. This reduction will be accomplished through an enforceable statewide cap on global warming emissions that will be phased in starting in 2012. In order to effectively implement the cap, AB 32 directs ARB to develop appropriate regulations and establish a mandatory reporting system to track and monitor global warming emissions levels.

Global Warming

As defined under AB 32, greenhouse gas emissions include the following: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride. Greenhouse gases have varying global warming potential. According to the EPA, the global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas" (EPA 2006l).

One teragram of carbon dioxide equivalent (Tg CO_2 Eq.) is essentially the emissions of the gas multiplied by the global warming potential. One teragram is equal to one million metric tons. The carbon dioxide equivalent is a good way to assess emissions because it gives weight to the global warming potential of the gas. A summary of the atmospheric lifetime and global warming potential of selected gases, which range from 1 to 23,900 is summarized in **Table 3.3-4, Global Warming Potential Ranges.**

TABLE 3.3-4
GLOBAL WARMING POTENTIAL RANGES

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100 year time horizon)
Carbon Dioxide	50-200	1
Methane	12 ± 3	21
Nitrous Oxide	120	310
HFC-23	264	11,700
HFC-134a	14.6	1300
HFC-152a	1.5	140
PFC: Tetrafluoromethane (CF_4)	50000	6,500
PFC: Hexafluoromethane (C_2F_6)	10000	9,200
Sulfur Hexafluoride (SF_6)	3200	23,900

Source: EPA 2006k

Inventory

An analysis of data compiled by the United Nations Framework Convention on Climate Change (UNFCCC), indicates that in 2004, total GHG emissions were 20,135 Tg CO_2 Eq., excluding emissions/removals from land use, land use change, and forestry (UNFCCC 2006). In 2004, the U.S. contributed the most GHG emissions (35 percent of global emissions). In 2004, in the U.S., total GHG emissions were 7074.4 Tg CO_2 Eq., which is an increase of 15.8 percent from 1990 emissions (EPA 2006l, UNFCCC 2006).

According to the California Energy Commission, California is a substantial contributor of global greenhouse gases as it is the second largest contributor in the U.S. and the sixteenth largest in the world (CEC 2006). During 1990 to 2003, California's gross state product grew 83 percent while GHG emissions grew 12 percent. While California has a high amount of GHG emissions, it has low emissions per capita. In 2004, California produced 492 Tg CO_2 Eq. (CEC 2006), which is approximately seven percent of U.S. emissions. The major source of GHG in California is transportation, contributing 41 percent of the state's total GHG emissions (CEC 2006). Electricity generation is the second largest generator, contributing 22 percent of the state's GHG emissions.

The California Energy Commission estimated that emissions from fuel use in the commercial and residential sectors in California decreased 9.7 percent over the 1990 to 2004 period (CEC 2006). The decrease in greenhouse gases could demonstrate the effectiveness of energy conservation in buildings (Title 24 requirements) and appliances. The decrease in greenhouse gases attributed to these sources is even more substantial when the population increase in California is considered.

There is no known GHG emission data for the SJVAB.

Health Effects

According to the EPA, health effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat related problems include heat rash and heat stroke. In addition, climate sensitive diseases may increase, such as those spread by mosquitoes and other disease carrying insects. Those diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture, which would have negative consequences. Global warming may also contribute to air quality problems from increased frequency of smog and particulate air pollution (EPA 2006i).

Water Vapor

Water vapor (H_2O) is the most abundant, important, and variable greenhouse gas in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered to be a result of climate feedbacks related to the wanting of the atmosphere rather than a direct result of industrialization (EPA 2006). The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is

able to 'hold' more water when it is warmer), leading to more water vapor in the atmosphere. As a greenhouse gas, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

There are no health effects from water vapor. When some pollutants come in contact with water vapor, they can dissolve and then the water vapor can be a transport mechanism to enter the human body. The main source of water vapor is evaporation from the oceans (approximately 85 percent). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from sea ice and snow, and transpiration from plant leaves.

Carbon Dioxide

Carbon dioxide ($C0_2$) is an odorless, colorless natural greenhouse gas. Outdoor levels of carbon dioxide are not high enough to result in negative health effects. Carbon dioxide is emitted from natural and anthropocentric (human) sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic out gassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid 1700's, the human caused activities have increased in scale and distribution. Over the past 50 years, data has shown that concentrations of carbon dioxide are increasing. Prior to the industrial revolution, concentrations were fairly stable at 280 ppm. According to the EPA, CO_2 concentrations are currently around 370 ppm, an increase of over 30 percent (EPA 2006). The International Panel on Climate Change (IPPCC) estimates that if left unchecked, the concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources (IPCC 2001). Some predict that this will result in an average global temperature rise of at least 2 degrees Celsius (IPPCC 2001). Sinks are mechanisms by which a gas or aerosol is taken out of the atmosphere. Carbon dioxide is removed from the air by photosynthesis, dissolution into ocean water, transfer to soils and ice caps, and chemical weathering of carbonate rocks.

Methane

Methane (CH_4) is an extremely effective absorber of radiation, though its atmospheric concentration is less than carbon dioxide and its lifetime in the atmosphere is brief (ten to twelve years), compared to other greenhouse gases. There are no health effects from

methane. Methane has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). According to the EPA, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane over the last 50 years (EPA 2006). Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide

Nitrous oxide (N_2O), also known as laughing gas, is a colorless greenhouse gas. Nitrous oxide can cause dizziness, euphoria, and sometimes slight hallucinations. In small doses it is harmless. In some cases, heavy and extended use can cause Olney's Lesions (brain damage). Concentrations of nitrous oxide also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 ppb. Nitrous oxide is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. According to the EPA, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load (EPA 2006). It is used as an aerosol spray propellant, i.e., in whipped cream bottles. It is also used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars. Nitrous oxide can be transported into the stratosphere, be deposited on the earth's surface, and be converted to other compounds by chemical reaction.

Chlorofluorocarbons

Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs are no longer being used; therefore, it is not likely that health effects would be experienced. Nonetheless, according to the National Institute for Occupational Safety and Health (NIOSH) that in confirmed indoor locations, working with CFC- 113 or other CFCs is thought to result in death by cardiac arrhythmia (heart frequency too high or too low) or asphyxiation (NIOSH 1989).

CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and was extremely successful, so much so that levels of the major CFCs are now remaining level or declining. However, according to the National Oceanic and Atmospheric Administration (NOAA), their long atmospheric lifetimes mean that some of the CECs will remain in the atmosphere for over 100 years (NOAA 2005).

Hydrofluorocarbons

According to the EPA, Hydrofluorocarbons (HFCs) are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the greenhouse gases, they are one of three groups with the highest global warming potential. The HPC's with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2) (EPA 2006). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 HFC-1 34a are now about 10 parts per trillion ~pt) each (EPA 2006). Concentrations of HFC-152a are about 1 ppt. HFCs are man made for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt according to the EPA (EPA 2006). The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur Hexafluoride

Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest GWP of any gas evaluated, 23,900. According to the EPA, concentrations in the 1990's were about 4 ppt (EPA 2006). In high concentrations in confined areas, the gas presents the hazard of suffocation because it displaces the oxygen needed for breathing. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel with sulfur in it is burned. Black carbon (or soot) is emitted during bio mass burning incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing as a result of other sources around the world.

AMBIENT AIR QUALITY

Air pollutant concentrations are measured at several monitoring stations in Kern County. The Shafter-Walker air quality monitoring station is the closest to the project site with sufficient data to meet U.S. EPA and/or ARB criteria for quality assurance. The Shafter-Walker ambient air quality monitoring station monitors ambient concentrations of ozone and nitrogen dioxide and is considered generally representative of the air quality in the vicinity of the project site. Ambient monitoring data for airborne particulates and carbon monoxide were obtained from the Bakersfield-5558 California Avenue air quality monitoring station. The last four years of available measurement data (i.e., 2003 through 2006) obtained from these monitoring stations is summarized in **Table 3.3-5, Summary of Ambient Air Quality Monitoring Data**. As depicted, the state (1-hour) and national (8-hour) ozone standards were exceeded several times during the past three years. The state and national standards for suspended PM_{10} and $PM_{2.5}$ were also exceeded during the past three years. With respect to CO and NO_2, neither the state nor the national standards were exceeded.

TABLE 3.3-5
SUMMARY OF AMBIENT AIR QUALITY MONITORING DATA

	2003	2004	2005	2006
Ozone				
State standard: 1-hour average, 0.09 ppm				
National standard: 1-hour/8-hour average, 0.12/0.08 ppm				
Maximum concentration (1-hour/8-hour average)	0.121/0.104	0.100/0.092	0.104/0.096	0.106/0.099
# Of days state/national 1-hour standard exceeded	18/0	3/0	14/0	20/0
Number of days national 8-hour standard exceeded	15	3	15	23
Carbon Monoxide (CO)				
State standard: 1-hour/8-hour average, 20/9.1 ppm				
National standard: 1-hour/8-hour average, 35/9 ppm				
Maximum concentration (1-hour/8-hour average)	3.3/2.3	3.1/1.8	3.1/2.0	NA
Number of days state 1-hour/8-hour standard exceeded	0/0	0/0	0/0	NA
Number of days national 1-hour/8-hour standard exceeded	0/0	0/0	0/0	NA
Nitrogen Dioxide (NO_2)				
State standard: 1-hour average, 0.25 ppm				
National standard: Annual average, 0.053 ppm				
Maximum concentration (1-hour average)	0.071	0.074	0.063	0.100

Annual average	0.016	0.017	0.015	0.019
Number of days state standard exceeded	0	0	0	0
Suspended Particulate Matter (PM_{10})				
State standard: 24-hour average, 50 $\mu g/m^3$				
National standard: 24-hour average, 150 $\mu g/m^3$				
Maximum concentration (state/national)	116/110	93/95	108/106	94/92
Number of days state standard exceeded (measured/calculated[2])	30/160.1	22/NA	14/82.7	1/NA
Number of days national standard exceeded (measured/calculated[2])	0/3	0/0	0/0	0/NA
Suspended Particulate Matter ($PM_{2.5}$)				
No separate state standard				
National standard: 24-hour average, 65 $\mu g/m^3$				
Maximum concentration (state/national)	84.5/59.3	72.8/70.0	102.1/85.7	66.6/65.9
Number of days national standard exceeded	0	3	5	2

Source: California Air Resources Board 2005.

Notes: ppm = Parts per million; $\mu g/m^3$ = Micrograms per cubic meter
NA = Ambient data not currently available

[1] Ambient concentrations of ozone and nitrogen dioxide obtained from the Shafter-Walker ambient air quality monitoring station. Ambient concentrations of airborne particulate matter and carbon monoxideobtained from the Bakersfield-5558 California Avenue ambient air quality monitoring station.

[2] Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every six days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

Attainment Status

Under the CCAA, the ARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data do not support either an attainment or nonattainment status. The CCAA divides districts into

moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The EPA designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the ARB terminology of attainment, nonattainment, and unclassified is more frequently used. The sub-categories for nonattainment status; serious, severe, and extreme; are also used by U.S. EPA. In 1991, new nonattainment designations were assigned to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

The state and national attainment status designations pertaining to the SJVAB are summarized in **Table 3.3-6, San Joaquin Valley Air Basin Attainment Status Designations**. The SJVAB is currently designated as a nonattainment area with respect to the state PM_{10} and 1-hour ozone standards. The SJVAB is also designated nonattainment for the national 8-hour ozone standard and the national $PM_{2.5}$ standard. The SJVAB was recent redesignated attainment for the national PM_{10} standard. However, despite noteworthy air quality improvements over the past decade, the San Joaquin Valley failed to meet the previous federal ozone standard deadline and thus was downgraded from serious nonattainment to severe nonattainment designation by the EPA. To avoid being faced with sanctions, the SJVAPCD was voluntarily redesignated from severe nonattainment to extreme nonattainment, the federal government's worst air quality designation for ground-level ozone. An extreme nonattainment designation is not a delay in implementing air pollution controls, but allows the valley the opportunity to benefit from improved pollution controls for industry, as well as mobile-source controls being implemented by other agencies, without incurring immediate sanctions (SJVAPCD 2006).

TABLE 3.3-6
SAN JOAQUIN VALLEY AIR BASIN ATTAINMENT STATUS DESIGNATIONS

Pollutant	National Designation	State Designation
Ozone, 1 hour	No Federal Standard (see note below)	Nonattainment/Severe
Ozone, 8 hour	Nonattainment/Serious	No state standard
PM_{10}	Attainment[1]	Nonattainment
$PM_{2.5}$	Nonattainment	No State Standard
CO	Unclassified/Attainment	Unclassified/Attainment
Nitrogen dioxide	Unclassified/Attainment	Attainment
Sulfur dioxide	Unclassified/Attainment	Attainment
Lead (particulate)	No designation	Attainment
Hydrogen sulfide	No federal standard	Unclassified
Sulfates	No federal standard	Attainment
Visibility-reducing particulates	No federal standard	Unclassified

Source: SJVAPCD 2006

Notes: 1. Redesignated attainment October 17, 2006 by the EPA

3.2.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following thresholds of significance, obtained from the SJVAPCD's Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 1998), are used to determine whether implementation of the proposed project would result in a significant air quality impact:

1) Short-term Emissions of Particulate Matter (PM)—Construction impacts associated with the proposed project would be considered significant if the feasible control measures for construction in compliance with Regulation VIII as listed in the SJVAPCD guidelines are not incorporated or implemented.

2) Short-term Emissions of Ozone Precursors (ROG and NOx)—Construction impacts associated with the proposed project would be considered significant if the project generates emissions of ROG or NOX that exceeds 10 tons/year.

3) Long-term Emissions of Ozone Precursors (ROG and NOx)—Operational impacts associated with the proposed project would be considered significant if the project generates emissions of ROG or NOX that exceeds 10 tons/year.Long-term Emissions of Particulate Matter (PM).

4) Long-term Emissions of Particulate Matter (PM).

5) Hazardous Air Pollutants—Exposure to HAPs would be considered significant if the probability of contracting cancer for the Maximally Exposed Individual would exceed 10 in 1 million or would result in a Hazard Index greater than 1.

6) Odorous Emissions—Odor impacts associated with the proposed project would be considered significant if the project has the potential to frequently expose members of the public to objectionable odors.

7) Local Mobile-Source CO Concentrations—Local mobile source impacts associated with the proposed project would be considered significant if the project contributes to CO concentrations at receptor locations in excess of the CAAQS (i.e., 9.0 ppm for 8 hours or 20 ppm for 1 hour).

PROJECT IMPACTS AND MITIGATION MEASURES

Short-Term Construction Emissions

Impact 3.3-1 The proposed project does not include SJVAPCD-recommended measures for the control of particulate matter (PM) emissions for construction-related activities as required by Regulation VIII. As a result, this impact is considered a **potentially significant**.

Construction generated emissions are "short-term," temporary in duration, and pose the potential to represent a significant air quality impact, particularly PM_{10} emissions. Construction emissions may potentially result in substantial increases in localized PM concentrations, adverse health effects and nuisance concerns such as reduced visibility and soiling of exposed surfaces. The emission of PM is typically greatest during initial site preparation, including grading and excavation activities, as well as vehicle travel on unpaved roadways and surfaces.

The SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* (1998) (GAMAQI), emphasizes implementation of effective and comprehensive control measures rather than requiring a detailed quantification of construction emissions. As stated above, the GAMAQI has adopted a set of PM_{10} fugitive dust rules collectively called Regulation VIII. Compliance with Regulation VIII during the construction phase of the proposed project and implementation of all control measures indicated in Table 6-2 and 6-3 of the GAMAQI will reduce PM_{10} impacts to less than significant levels. The project as currently proposed does not include SJVAPCD-recommended measures for the control of PM_{10} emissions for construction-related activities. Although the SJVAPCD, through GAMAQI, does not require quantification of PM_{10} emissions, the City has elected to numerically quantify construction-generated PM emissions to provide greater details and additional prospective concerning

the proposed projects' potential air quality impacts. Construction-generated emissions of PM_{10} were, however, calculated for the proposed project using the Urban Emissions (URBEMIS 2002 [v.8.7]) computer program. The SJVAPCD recommends utilizing this program for specific numerical quantification of PM_{10} emissions. The model bases estimated construction emissions on construction requirements typically associated with similar land uses, based, in part, on proposed area of construction. Modeling was conducted based on default assumptions contained in the model for the San Joaquin Valley Air Basin. Construction parameters, including off-road equipment requirements and acreage assumptions, were modified based on SJVAPCD recommendations (SJVAPCD 2006). Daily construction-generated emissions of PM_{10} are summarized in **Table 3.3-7, Construction-Generated PM Emissions**. The URBEMIS modeling worksheets are included in Appendix B.

TABLE 3.3-7
CONSTRUCTION-GENERATED PM EMISSIONS

Sources	Emissions (Tons)					
	Total		Exhaust		Fugitive Dust	
	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Demolition	0.23	0.06	0.02	0.02	0.21	0.04
Site Grading	2.17	0.57	0.15	0.15	2.02	0.42
Building Construction	0.15	0.13	0.13	0.13	0.02	0.00
Interchange Improvements	0.30	0.19	0.16	0.16	0.14	0.03
Detention Basin Construction	1.1	0.7	0.4	0.4	0.7	0.1
Total Emissions	**3.95**	**1.65**	**.086**	**0.86**	**3.09**	**0.9**
SJVAPCD Thresholds (tons/year)	**None**					

Source: AMBIENT Air Quality & Noise Consulting 2007

Note: Demolition, Site Grading, and Building Construction emissions were estimated using the URBEMIS 2002 [v.8.7] computer model based on default model settings recommended by the SJVAPCD. Interim Interchange Improvements were calculated using the SMAQMD's Road Construction Emissions Model and assumed 1 acre of active disturbance/day, 0.5 miles of daily road construction, 6 months total project duration. Detention Basin construction assumes 300,000 cubic yards of soil excavated, 2 acres of active disturbance/day, 1 mile onsite round-trip distance for material transport to the project site (20 yards of capacity per vehicle), and 0.5 miles of travel/vehicle on unpaved roads.

Based on the modeling conducted, construction of the proposed project (including secondary impacts associated with the interim improvements at the State Route 99/Woollomes Avenue interchange, expansion of the City's stormwater detention basin to accommodate storm water generated from the proposed project) would generate a total of approximately 3.95 tons of PM_{10}. Fine particulate matter PM_{10} emissions would be

primarily associated with fugitive dust generated during site grading, which constitutes approximately 93 percent of the total construction-generated PM_{10}.

Emissions of $PM_{2.5}$ are a subset of PM_{10} and constitute approximately 99 percent of the PM_{10} emissions generated by combustion sources. For fugitive sources, the $PM_{2.5}$ fraction of PM_{10} is approximately 21 percent (SCAQMD 2006). Based on these fractions and the estimated emissions of PM_{10} generated by the proposed project, a total of approximately 0.4 tons of $PM_{2.5}$ would be generated over the course of construction, which is estimated to occur over approximately three years. Annual emissions would vary depending on the specific construction activities conducted.

As previously discussed, the SJVAPCD has not adopted a quantitative significance thresholds for construction generated PM emissions. However, uncontrolled emissions of PM would be considered to contribute to existing nonattainment conditions and potential localized exceedances of state or national ambient air quality standards. As a result, short-term construction-generated PM emissions resulting from implementation of the proposed project would be considered a **potentially significant** air quality impact. The following mitigation measure consists of fugitive dust control measures to reduce emissions. Compliance with these measures during construction activities fulfills the requirements of SJVAPCD Regulation VIII. Although compliance with SJVAPCD Regulation VIII is mandatory, the control measures required by Regulation VIII are included as mitigation measures to provide additional regulatory oversight of construction-related impacts from PM_{10} emissions.

Mitigation Measure

MM 3.3-1 A Dust Control Plan (DCP) shall be prepared and submitted to the SJVAPCD prior to the start of demolition or construction activities. Construction activities shall not commence until the SJVAPCD has approved or conditionally approved the DCP. The DCP shall comply with SJVAPCD Regulation VIII, Fugitive PM_{10} Prohibitions. Copies of the SJVAPCD-approved DCP shall be provided to the City of Delano prior to beginning construction. Dust control measures to be included in the DCP shall include, but are not limited to, the following:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant or vegetative ground cover.
- All on-site unpaved construction roads and off-site unpaved construction access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.

- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.

- During demolition of buildings all exterior surfaces of the building shall be wetted.

- When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least 6 inches of freeboard space from the top of the container shall be maintained.

- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)

- Following the addition of materials to, or the removal of materials from, the surfaces of outdoor storage piles, piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.

- Onsite vehicle speeds on unpaved roads shall be limited to 15 mph.

- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from adjacent project areas with a slope greater than 1 percent.

- Wheel washers shall be installed for all exiting trucks and equipment, or wheels shall be washed to remove accumulated dirt prior to leaving the site.

- Excavation and grading activities shall be suspended when winds exceed 20 mph.

- Visible dust emissions shall not exceed 20-percent opacity during periods when soil is being disturbed by equipment or by wind. Visible dust emissions opacity of 20 percent means dust that would obstruct an observer's view of an object by 20 percent. Dust control may be achieved by applying water before/during earthwork and onto unpaved traffic areas, phasing work to limit dust, and setting up wind fences to limit wind blown dust.

In addition to the measures identified above, the following measures, including those identified in Table 6-3 of the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* shall be implemented:

- Install wind breaks at windward sides of construction areas. (This measure will be implemented if the City, in coordination the SJVAPCD, determines that the fugitive dust control measures described above are not sufficiently effective.)
- Comply with the NESHAPS during the renovation/demolition of any existing buildings on the project site with the potential to contain asbestos.
- Ground-disturbing activities (e.g., site grading) shall be limited to a maximum of 5 acres per day.

Implementation of the above mitigation measures would substantially reduce impacts resulting from emissions associated with construction activities. Based on the modeling conducted, maximum annual PM emissions would be reduced by up to approximately 50 to 75 percent. With mitigation, predicted annual emissions of PM associated with individual construction phases would be reduced to a maximum of approximately 1.1 tons/year of PM_{10} and approximately 0.3 ton/year of $PM_{2.5}$. All actions required by the SJVAPCD shall be implemented, which would be considered the extent of available feasible mitigation measures. The SJVAPCD has determined that implementation of the above mitigation measures would be sufficient to reduce the project's contribution to local and regional PM air quality impacts to a **less than significant** level.

Short-Term Emissions of Ozone Precursor Pollutants

Impact 3.3-2 Emissions of the ozone-precursor pollutant NO_x would exceed the SJVAPCD's corresponding significance thresholds of 10 tons/year. As a result, short-term emissions of this ozone-precursor pollutant would be considered **potentially significant.**

Construction activities are also a source of ozone precursor pollutants (i.e., ROG and NO_x). As with construction-generated emission of PM_{10}, construction generated emissions of ozone-precursor pollutants are also "short-term" and temporary in duration. Construction-generated emissions of organic gases can result from the use of solvents in adhesives, non-waterbased paints, thinners and some insulating and caulking materials. Asphalt use in paving also emits organic gas for a short time after its application. Exhaust emissions of ROG and NO_x associated with the use of motorized construction equipment and vehicles would also occur.

Detailed construction information (e.g., equipment and personnel needs) is not currently available for the proposed project, including the proposed interchange improvements and construction of the proposed detention basin. Short-term emissions of ROG and NO_x associated with the proposed project were, therefore, estimated using the URBEMIS 2002 computer program, based on the default assumptions contained in the model and SJVAPCD-recommended changes to model parameters (SJVAPCD 2006). Construction-generated emissions associated with the proposed interchange improvements were based on conceptual design plans and information obtained from similar projects using the Road Construction Emissions Model, developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD). Construction-generated emissions of ROG and NO_x are summarized in **Table 3.3-8, Construction-Generated Emissions of ROG and NO_x Without Mitigation**. The URBEMIS modeling worksheets are included in Appendix B.

TABLE 3.3-8
CONSTRUCTION-GENERATED EMISSIONS OF ROG & NO_X WITHOUT MITIGATION

Sources	Emissions (tons/year)	
	ROG	NO_X
Demolition	0.1	0.7
Site Grading	0.6	3.7
Building Construction	0.5	3.1
Asphalt Paving	5.2	0.1
Interim Interchange Improvements (State Route 99/Woollomes Avenue)	0.5	3.1
Detention Basin Construction	0.4	2.1
Total Emissions	**7.3**	**12.8**
SJVAPCD Thresholds (tons/year)	**10**	**10**

Source: AMBIENT Air Quality & Noise Consulting 2007

Note: Demolition, Site Grading, and Building Construction emissions were estimated using the Urbemis 2002 [v.8.7] computer model based on default model settings recommended by the SJVAPCD. Interchange Improvements were calculated using the SMAQMD's Road Construction Emissions Model and assume 1 acre of active disturbance/day, 0.5 miles of daily road construction, 6 months total project duration. Detention Basin construction assumes 300,000 cubic yards of soil excavated, 2 acres of active disturbance/day, 1 mile onsite round-trip distance for material transport to the project site (20 yards of capacity per vehicle), and 0.5 miles of travel/vehicle on unpaved roads.

As indicated in **Table 3.3-6, Construction-Generated Emissions of ROG & NO_x Without Mitigation**, uncontrolled emissions of ROG associated with individual construction phases would not be anticipated to exceed the SJVAPCD's corresponding significance thresholds of 10 tons/year, even if all construction activities were to occur within the same year. Depending on how development proceeds, it is possible, however, that predicted

emissions of NO_x could potentially exceed the SJVAPCD's significance threshold, particularly if development of the major onsite tenant structures were to occur within the same year that construction of the proposed interchange improvements and detention basin are constructed. As a result, short-term emissions of the ozone-precursor pollutant NO_x would be considered **potentially significant.** Implementation of the following mitigation measure would reduce this impact to a less than significant level.

Mitigation Measures

MM 3.3-2 The proposed project shall comply with SJVAPCD Indirect Source Review Rule (Rule 9510). In accordance with ISR Rule 9510, a detailed air impact assessment (AIA) shall be prepared detailing the specific construction requirements (i.e., equipment required, hours of use, etc.) and operational characteristics associated with proposed onsite and offsite improvements. In accordance with this rule, exhaust emissions for construction equipment greater than fifty (50) horsepower used or associated with the development project shall be reduced by the following minimum amounts from the statewide average as estimated by the ARB: (a) 20 percent of the total NO_x emissions and (b) 45 percent of the total PM_{10} exhaust emissions. Construction emissions may be reduced on-site by using less-polluting construction equipment, which can be achieved by utilizing add-on controls, cleaner fuels, or newer lower emitting equipment. Based on the findings of the AIA, the project applicant shall pay to the SJVAPCD a monetary sum necessary to offset the required construction emissions not reduced by incorporated emission reduction measures contained in the AIA. Any offset fees to be paid will be dependent on the findings of the AIA, to be calculated in accordance with the methodologies identified in the ISR Rule 9510 and approved by the SJVAPCD. To reduce short-term air quality impacts attributable to the proposed project, the following SJVAPCD-recommended measures included, but are not limited to:

- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set);
- On-site equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. Equipment maintenance records shall be kept on site and made available upon request by the SJVAPCD or City of Delano;
- When not in use, on-site equipment shall not be left idling; and

- The project applicant shall comply with all applicable SJVAPCD rules and regulations. Copies of any applicable air quality permits and/or monitoring plans shall be provided to the City of Delano.

With implementation of the above mitigation measures, maximum annual emissions of NO_x would be reduced by a minimum of approximately 20 percent, in accordance with SJVAPCD ISR Rule 9510. Mitigated emissions of NO_x are depicted in **Table 3.3-9, Construction-Generated Emissions of NO_x With Mitigation**. In total, construction of the proposed project would generate an estimated 10.5 tons of NO_x over the course of construction. However, it is important to note that construction of the proposed facilities would occur over a period of multiple years. Nonetheless, depending on how development proceeds and the specific activities conducted, predicted construction generated emissions of NO_x could potentially exceed SJVAPCD significance threshold of 10 tons/year. In accordance with ISR Rule 9510, emission offsets would be required to offset any remaining project-generated emissions. Mitigated maximum annual emissions of NO_x with offsets would not exceed the SJVAPCD's significance threshold of 10 tons/year. Therefore, this impact is considered **less than significant**.

TABLE 3.3-9
CONSTRUCTION-GENERATED EMISSIONS OF NO_x WITH MITIGATION

Sources	NO_x Emissions with Mitigation (Tons)
Demolition	0.7
Site Grading	3.0
Building Construction	2.5
Asphalt Paving	0.1
Interchange Improvements	2.5
Detention Basin Construction	1.7
Total Emissions	**10.5**
SJVAPCD Thresholds (tons/year)	**10**

Source: AMBIENT Air Quality & Noise Consulting 2007

Note: Mitigated emissions do not include offsets. Assumes average NOx reduction of 20 percent (ISR Rule 9510). Demolition, Site Grading, and Building Construction emissions were estimated using the Urbemis 2002 [v.8.7] computer model based on default model settings recommended by the SJVAPCD. Interchange Improvements were calculated using the SMAQMD's Road Construction Emissions Model and assume 1 acre of active disturbance/day, 0.5 miles of daily road construction, 6 months total project duration. Detention Basin construction assumes 300,000 cubic yards of soil excavated, 2 acres of active disturbance/day, 1 mile onsite round-trip distance for material transport to the project site (20 yards of capacity per vehicle), and 0.5 miles of travel/vehicle on unpaved roads.

Long-term Emissions of Regional Pollutants of Primary Concern

Impact 3.3-3 Long-term generation of emissions attributable to the proposed project would exceed applicable SJVAPCD significance thresholds for regional pollutants of primary concern. This impact is considered a **significant impact**.

Regional area- and mobile-source emissions of ROG and NO_X associated with the proposed project were estimated using the ARB-approved URBEMIS 2002 (v.8.7) computer program, which is designed to model emissions for land use development projects. URBEMIS 2002 allows land use selections that include project location specifics and trip generation rates. Emissions were estimated based on default model settings recommended by the SJVAPCD. The default settings for the SJVAB contained in the model were used for this analysis, based on trip generation rates obtained from the revised transportation analysis prepared for the proposed project by Peters Engineering Group in March 2007. Modeling results are summarized below in **Table 3.3-10, Regional Emissions Associated with Project Buildout**. The URBEMIS modeling worksheets are included in Appendix B.

TABLE 3.3-10
REGIONAL EMISSIONS ASSOCIATED WITH PROJECT BUILDOUT

Sources	Emissions Generated (tons/year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area Sources	0.93	0.79	0.0	0.0
Mobile Sources	31.82	49.41	52.99	52.46
Total Emissions	**32.75**	**50.20**	**52.99**	**52.46**
SJVAPCD Thresholds (tons/year)	**10**	**10**	**None**	**None**

Source: AMBIENT Air Quality & Noise Consulting 2007

Note: Area-source emissions associated with landscaping, natural gas and consumer products were estimated based on default model settings recommended by the SJVAPCD (SJVAPCD 2006). Mobile-source emissions were estimated based on trip generation rates obtained from the traffic analysis prepared for this project under buildout conditions.

Based on the modeling conducted, buildout of the proposed project would generate approximately 33 tons/year of ROG; and 50 tons/year of NO_X; as noted in **Table 3.3-10, Regional Emissions Associated with Project Buildout**. Total emissions of ROG and NO_X would exceed the SJVAPCD's corresponding significance thresholds of 10 tons/year. Long-term operation of the proposed project would also generate a total of approximately 53 tons/year of PM_{10}. The SJVAPCD has not adopted a significance threshold for PM_{10}. However, because the SJVAB is currently designated nonattainment for PM_{10} and $PM_{2.5}$, project-generated PM emissions could contribute to existing nonattainment conditions. For these reasons, regional air quality impacts attributable to the proposed project would be

considered a **significant impact**. Implementation of the following mitigation measure would reduce regional emissions of NO_x and PM_{10}.

Mitigation Measures

MM 3.3-3 The proposed project shall comply with SJVAPCD Indirect Source Review (ISR) Rule 9510. In accordance with ISR Rule 9510, a detailed air impact assessment (AIA) shall be prepared detailing the specific construction requirements (i.e., equipment required, hours of use, etc.) and operational characteristics associated with proposed onsite and offsite improvements. In accordance with this rule, operational emissions of NO_x and PM_{10} shall be reduced by a minimum of 33.3 percent and 50 percent, respectively. Emission reductions are in comparison to the project's operational baseline (unmitigated) emissions calculated over a ten year period. Based on the findings of the AIA, the applicant shall pay to the SJVAPCD a monetary sum necessary to offset the required operational emissions not reduced by the incorporated emission reduction measures contained in the AIA. Any offset fees to be paid will be dependent on the findings of the AIA, to be calculated in accordance with the methodologies identified in the ISR Rule 9510 and approved by the SJVAPCD. Methods of reducing operational emissions include, but are not limited to, the following. (It should be noted that many of these measures are already included in the proposed project design or as mitigation listed in **Section 3.12**, **Traffic and Circulation**; however, they are repeated here to allow for a more complete listing of potential mitigation options commonly associated with such projects):

- If public transit services are available to the project site, transit enhancing infrastructure (e.g., transit shelters, benches, street lighting, route signs and displays, and/or bus turnouts/bulbs) shall be provided.

- Incorporate pedestrian/bicycle enhancing infrastructure that includes direct pedestrian connections (e.g., sidewalks) between land uses, trees to shade sidewalks and parking areas, street and parking lot lighting, designated bicycle parking areas and employee lockers.

- Use solar, low-emission, central, or tankless water heaters; increase wall and attic insulation beyond Title 24 requirements.

- Develop and implement a program to encourage employers to promote carpooling and/or the use of low-emission vehicles, thus providing emission reductions. The program may include financial incentives, preferred parking, or other benefits for employees and businesses that use low-emission vehicles.

- Incorporate skylights into the building design to supplement and reduce the need for interior lighting within buildings. Day lighting systems should also be incorporated that automatically and continuously dims interior lights as the daylight contribution increases. (This measure has already been incorporated into the design of the proposed Wal-Mart Supercenter.)

- Use low-energy demand lighting or other energy-saving features (i.e., motion-sensors) for electronic displays and interior lighting, where practical. (This measure has already been incorporated into the design of the proposed Wal-Mart Supercenter.)

- During hours of non-operation, interior lighting should be dimmed to reduce energy demands. (This measure has already been incorporated into the design of the proposed Wal-Mart Supercenter.)

- Use white membrane roof coatings/materials to increase solar reflectivity and reduce interior building cooling demands. (This measure has already been incorporated into the design of the proposed Wal-Mart Supercenter.)

- Installation of energy-efficient lighting and appliances (e.g., "Energy Star" rated). (This measure has already been incorporated into the design of the proposed Wal-Mart Supercenter.)

- The proposed home improvement store and Wal-Mart Supercenter shall use low-emission (e.g., model year 2004 or newer) or alternatively-fueled (e.g., natural gas) forklifts.

- Encourage commercial fleets to use newer lower-emission or alternatively fueled vehicles. For existing fleet vehicles, incentives are available through the ARB's Carl Moyer Memorial Air Quality Standards Attainment Program to assist in the conversion of in-use vehicles to cleaner-than-required engines. For older fleet vehicles, conversion to newer, cleaner technologies can reduce emissions by up to approximately 85 percent. The applicability and effectiveness of vehicle conversions is based on various factors, including existing vehicle fleet characteristics.

- The project applicant shall comply with all applicable SJVAPCD rules and regulations. Copies of any applicable air quality permits and/or monitoring plans shall be provided to the City of Delano.

Incorporation of the above mitigation measures, including compliance with SJVAPCD ISR Rule 9510, would reduce regional emissions of NO_x and PM_{10} by approximately 33.3 percent and 50 percent, respectively, over a 10-year period. Based on these minimum reductions and the preliminary emissions modeling conducted for this RDEIR, mitigated annual emissions of NO_x and PM_{10} would be reduced to approximately 21.8 tons/year and 25.1 tons/year, respectively.

In accordance with ISR Rule 9510, offsets would be required to reduce unmitigated operational emissions associated with the proposed project to below SJVAPCD thresholds. The specific fees to be paid would be determined in consultation with the SJVAPCD and would be dependent on various factors, including the offset costs established by the SJVAPCD at the time of payment, as well as the specific emission-reduction measures incorporated into the proposed project, as identified in the AIA to be prepared for the proposed project. For instance, based on the URBEMIS modeling conducted as part of this EIR, the calculated pre-mitigation offset requirement would total approximately 125.5 tons of NO_x and 132.5 tons of PM_{10}, calculated over a period of 10 years in accordance with ISR Rule 9510. Assuming that offset fees were to be paid in full in 2007, the pre-mitigation offset fee would be $891,050 for NO_x and $741,205 for PM_{10}, based on year 2007 offset fee costs of $7,100/ton of NO_x and $5,594/ton of PM_{10}. Additional fees of approximately $65,200 would also be required to cover the administrative costs of the SJVAPCD. In total, the pre-mitigation offset fee for the proposed project would be approximately $1,697,545. As noted above, offset fees are partially dependent on the year during which the fee is paid and would increase in future years due to anticipated increases in offset costs. The incorporation of recommended emission-reduction measures, as noted above, would result in a reduction in the offset fees to be paid to the SJVAPCD. The specific measures to be implemented would be included in the required AIA, which is to be prepared in coordination with and approved by the SJVAPCD prior to project implementation.

With the incorporation of emissions offsets, as required by ISR Rule 9510, near-term operational emissions attributable to the proposed project would be reduced to a less than significant level. However, given that operation of the proposed land uses would likely extend beyond the ten-year offset period required by ISR Rule 9510 and that the availability of sufficient offsets beyond the initial 10-year operational period is currently unknown, long-term increases in regional emissions, beyond the 10-year offset period, could exceed SJVAPCD significance thresholds. As a result, long-term increases in regional emissions attributable to the proposed project would be considered **significant and unavoidable**.

Exposure to Toxic Air Contaminants

Impact 3.3-4 Commercial land uses proposed as part of the proposed project would have the potential to emit toxic air contaminants. The exposure of nearby

sensitive receptors to project-generated toxic air contaminants (TAC) is not anticipated to exceed SJVAPCD significance thresholds. This is considered a **less than significant impact**.

The proposed project would result in increased concentrations of TACs from both stationary and mobile sources. Potential exposure to TACs would occur during both the construction and operational phases of the proposed project.

Short-term Construction Impacts

As discussed previously, particulate exhaust emissions from diesel-fueled engines (DPM) was identified as a TAC by the ARB in 1998. Implementation of the proposed project would result in the generation of DPM emissions during construction associated with the use of off-road diesel equipment for site grading and excavation, paving, demolition, and other construction activities and during project operation from heavy-duty trucks used in commercial areas (e.g., delivery trucks).

Generation of DPM from construction projects typically occurs in a single area for a short period. Although construction associated with the proposed project would occur over an extended period (approximately three years), activities would be spread over a large area. Use of diesel-powered construction equipment in any one area would be short term and episodic and would cease when construction is completed in that area. In addition, the calculation of cancer risk is typically based on an average exposure period of 70-years. Construction activities would constitute less than approximately 4 percent of this exposure period. As a result, the short-term generation of DPM associated with project construction would not be anticipated to exceed SJVAPCD significance thresholds (i.e., cancer risk greater than 10 in 1 million and/or non-carcinogenic Hazard Index greater than 1 for the Maximally Exposed Individual). Therefore, impacts associated with construction-generated TAC emissions are considered **less than significant**. No mitigation measures are necessary.

Long-term Operational Impacts

Operational emissions of TACs attributable to the proposed project would result from onsite use of stationary and mobile sources, including the delivery of materials to onsite uses. The emissions and health-related impacts associated with stationary and mobile sources are discussed separately, as follows:

Stationary Sources

Commercial land uses developed as part of the proposed project may include facilities typically considered to be sources of TACs, such as dry cleaning establishments and gasoline stations. Emissions from these types of facilities often include vented and evaporative emissions. For example, emissions from gasoline stations most commonly

include vented emissions released during the transfer of fuel during the filling of storage tanks and vehicle refueling activities. Emissions from such sources are controlled by inclusion of pressure/vacuum valves on tank vent pipes and vapor-recovery devices on fuel-dispensing nozels. Emissions of primary concern associated with dry-cleaning establishments are primarily associated with the use of perchloroethylene, a solvent used in dry cleaning. Emissions from such commercial sources can result in both short-term and long-term health impacts to nearby receptors, including respiratory irritation and damage, and increased risk of cancer. Short-term (acute) exposures can result in loss of coordination; eye, nose and throat irritation; and headaches.

Pursuant to SJVAPCD Rule 2010, all stationary sources having the potential to emit TACs are required to obtain permits from the SJVAPCD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including Rule 2201 (New and Modified Stationary Source Review Rule), Rule 4001 (New Source Performance Standards), and Rule 4002 (National Emissions Standards for Hazardous Air Pollutants). In accordance with permitting requirements, the SJVAPCD evaluates sources to determine potential health-related impacts and to identify the appropriate control measures to be implemented to ensure protection of nearby receptors. Given that compliance with applicable standards and regulations would be required for the development and operation of facilities that may emit TACs and the distance to the nearest existing sensitive receptors (0.3 mile, or greater), TAC emissions from onsite stationary sources would not be anticipated to exceed SJVAPCD significance thresholds (i.e., cancer risk greater than 10 in 1 million and/or non-carcinogenic Hazard Index greater than 1 for the Maximally Exposed Individual).

Mobile Sources

Operation of the proposed project includes the construction of two large commercial land uses (e.g., the proposed Wal-Mart Supercenter and the Lowe's home improvement store) which would involve the use of diesel-powered delivery trucks on a regular basis. Based on data provided by the project applicant and a review of EIRs recently prepared for similar projects, the proposed Wal-Mart Supercenter would be anticipated to generate approximately 20 heavy-duty truck trips per day. The proposed Lowes Home Improvement would generate approximately 17 heavy-duty truck trips and approximately 6 medium duty truck trips on a daily basis. (Coats Consulting 2006, SJVAPCD 2006).

The TACs of primary concern associated with diesel-powered vehicles is DPM. DPM differs from other pollutants in that it is not a single substance, but rather a complex mixture of hundreds of substances. It is estimated that DPM accounts for approximately 70 percent of the health risks associated with TACs. In the State of California, emissions from on-road mobile sources are regulated by the ARB. As noted earlier in this section, the ARB has identified DPM as a toxic air contaminant (TAC). Reducing diesel exhaust particulate

emissions is one of ARB's highest public-health priorities and the focus of comprehensive statewide control programs. Following the identification of DPM as a TAC, ARB was required by law to determine the need for further control, which necessitated the initiation of the risk management phase of the DPM program. The ARB has since developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, which set a goal of 75 percent reduction of DPM by 2010 and an 85 percent reduction by 2020.

The ARB is currently in the process of implementing the control measure phase of the DPM program. While many of the DPM program controls have not been fully implemented at this time, there are existing regulations, which mandate lower DPM from new on-road diesel-fueled vehicles. These regulations will result in substantial reductions in DPM from on-road heavy-duty diesel-fueled engines, which began with the 2004 model year. One of the most recent control measures implemented by the ARB became effective on February 1, 2005, which limits idling time of diesel-fueled commercial motor vehicles to no more than 5 minutes. The ARB is currently reviewing additional regulatory changes that would expand this requirement to include non-commercial diesel-fueled vehicles.

Health Risk Assessment

To assess the health risks attributable to the proposed project, a human health risk assessment was conducted by SJVAPCD and in coordination with AMBIENT Air Quality & Noise Consulting. Modeling included emissions associated with the onsite travel and idling of diesel-powered vehicles, emissions associated with the operation of transportation refrigeration units, as well as onsite stationary and area sources emissions generated by various other onsite sources, such as emissions generated by the proposed gasoline dispensing facility.

To predict concentrations at nearby receptors, dispersion modeling was conducted using the ARB-approved Hotspot Analysis and Report Program (HARP) computer model. Predicted concentrations at the nearest residential and business receptors, along with emissions data for the various sources, were used for determination of chronic and acute hazard indices, as well as calculation of carcinogenic risks attributable to the proposed project.

To ensure that the results do not understate potential health risks, the methods used for calculating carcinogenic risk, hazard indices, and cancer burden are based on conservative emission factors and assumptions. As a result, predicted health risks should be interpreted as the upper boundary of risk. Therefore, incremental increases in human-health risks attributable to the proposed project would not be anticipated to exceed predicted levels and may, in actuality, be less.

Multiple factors determine whether the exposure of a receptor to TACs would exceed the recommended action level for cancer (10 in a million for the maximally exposed individual) or chronic hazard index risk levels (one or higher for the maximally exposed individual). The dose subjected to the maximally exposed individual is primarily a function of the concentration of a substance or substances in the environment and the extent of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher dose. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time.

Predicted health risks are presented in **Table 3.3-11, Predicted Diesel Exhaust Particulate Matter Cancer Risks**. Modeling output files and assumptions used in conducting the health risk assessment are included in Appendix B.

TABLE 3.3-11
PREDICTED DIESEL-EXHAUST PARTICULATE MATTER CANCER RISKS

Risk Categories	Predicted Risk
Acute Hazard Index	0.0
Chronic Hazard Index	0.0
Maximum Individual Cancer Risk (10^{-6})	1.4
Maximum Receptor Cancer Risk (10^{-6})	1.8

Source: SJVAPCD 2006

As shown, predicted health risks attributable to the proposed project would result in a maximum predicted cancer risk of approximately 1.8 in a million, or less, at the nearest receptors. The predicted acute and chronic hazard index at nearby receptors attributable to the proposed project would not exceed SJVAPCD significance thresholds. Based on the modeling conducted, predicted health risks associated with project-generated emissions of toxic air contaminants would not exceed applicable standards. As a result, this impact is considered **less than significant**. No mitigation measures are required.

Exposure to Odorous Emissions

Impact 3.3-5 Implementation of the proposed project would not result in the frequent exposure of nearby sensitive receptors to odorous emissions. This impact is considered **less than significant**.

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Projects with the

potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

The proposed project is not anticipated to result in the installation of any major odor emission sources. However, although specific commercial uses have not yet been identified, uses considered to be minor sources of odors may be developed. Such sources typically include dry cleaning establishments, restaurants and gasoline stations. However, odors from such sources are typically intermittent and disperse rapidly with distance from the source. Given the distance to the nearest sensitive receptor (0.3 mile), detectable increases in odorous emissions at nearby sensitive receptors would not be anticipated. This impact would be considered **less than significant**. No mitigation measures are necessary.

Local Mobile-Source Carbon Monoxide (CO) Concentrations

Impact 3.3-6 Given the relatively low background CO concentrations in the project vicinity and that implementation of the proposed project would not result in unacceptable levels of service at nearby signalized intersections, localized concentrations of CO are not anticipated to exceed applicable ambient air quality standards. Therefore, the proposed project's contribution to localized mobile-source CO concentrations is considered a **less than significant impact**.

The primary mobile-source pollutant of localized concern is CO. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. Under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels with respect to local sensitive land uses, such as residential units, hospitals, schools, and childcare facilities.

Localized mobile-source CO concentrations are of primary concern in heavily congested areas with high background concentrations. For this reason, existing signalized intersections that operate at unacceptable levels of service (i.e., LOS E or F) are of primary concern. Due to lower traffic volumes associated with unsignalized or stop-controlled intersections, localized CO concentrations do not typically exceed ambient air quality standards. As a result, modeling of CO concentrations is typically recommended for areas located near signalized roadway intersections that are projected to operate at an unacceptable LOS (i.e., LOS "E" or "F") during p.m. peak commute hours (SJVAPCD 1998).

Based on the traffic impact analysis prepared for this project by Peters Engineering Group in March 2007, implementation of the proposed project would result in unacceptable

levels of service at all of the signalized intersections on Woollomes Avenue and the northbound on/off-ramps of State Route 99 under "Existing plus Opening Year Approved Projects Plus Project" conditions without mitigation incorporated herein (See Section 3.12, Traffic and Circulation). Predicted CO concentrations at receptors located in the vicinity of the State Route 99/Woollomes Avenue interchange were calculated using the Caline4 computer model. Modeling was conducted based on traffic data obtained from the traffic analysis prepared in March 2007 for the RDEIR and worst-case meteorological conditions. To be conservative, background CO concentrations were based on the maximum 1-hour and 8-hour CO concentrations measured during the last three years of available data, obtained from the nearest air quality monitoring station. In actuality, future background concentrations are anticipated to be lower due to improved motor vehicle efficiency and use of reformulated fuels. Predicted maximum 1-hour and 8-hour CO concentrations at nearby receptors are summarized in **Table 3.3-12, Predicted Local Mobile Source CO Concentrations**. The CO modeling is included in Appendix B of the RDEIR.

TABLE 3.3-12
PREDICTED LOCAL MOBILE-SOURCE CO CONCENTRATIONS

Intersection	Predicted CO Concentrations (ppm)	
	1-hour	8-hour
Woollomes Ave. & State Route 99 Interchange	4.3	2.9
California Ambient Air Quality Standards:	20	9.1

Source: AMBIENT Air Quality and Noise Consulting 2007

Note: To ensure a conservative analysis, background concentrations are based on the highest measured ambient CO concentration obtained from the nearest monitoring station during the last three years of available data.

Based on the modeling conducted, predicted maximum 1-hour and 8-hour mobile-source CO concentrations in the vicinity of the Woollomes Avenue and State Route 99 interchange would be approximately 4.3 and 2.9 ppm, respectively based on the traffic volumes for the proposed project obtained in the traffic impact analysis prepared in March 2007. It is important to note that these predicted concentrations do not include proposed traffic mitigation incorporated in Section 3.12, Traffic and Circulation. Implementation of recommended traffic mitigation measures, as noted in the traffic analysis prepared for the proposed project, would improve the level of service at this intersection to acceptable levels (i.e., LOS C, or better), which would be anticipated to result in further reductions in predicted CO concentrations at nearby receptors. Based on the modeling conducted in the RDEIR and the slight increase in traffic volumes reported in the traffic analysis prepared in March 2007, mobile source CO concentrations are expected to increase slightly with implementation of the proposed project. However, predicted mobile-source CO concentrations would not exceed the 1-hour or 8-hour CAAQS (i.e., 20 ppm and 9.0 ppm,

respectively). As a result, this impact would be considered **less than significant**. No mitigation measures are necessary.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Regional Air Quality Impacts

Impact 3.3-7 Project-generated emissions would contribute, on a cumulative basis, to existing and future regional nonattainment conditions within the SJVAB, as well as an increase in greenhouse gas emissions. This impact is considered **significant**.

The SJVAPCD's approach towards assessing cumulative impacts is based, in part, on the on projected increases in emissions attributable to the proposed project, as well as the project's consistency with the growth projections used for development of air quality attainment plans. In accordance with SJVAPCD-recommended methodology, projects anticipated to have significant and unavoidable impact at the project-level would also be considered to have significant cumulative air quality impacts. In addition, a project would be considered to conflict with or obstruct implementation of the regional air quality plans if it would be inconsistent with the emissions inventories contained in the regional air quality plans. Emission inventories are developed based on projected increases in population growth and vehicle miles traveled (VMT) within the region. Project-generated increases in population or VMT could, therefore, potentially conflict with regional air quality attainment plans.

As noted earlier in this report, implementation of the proposed project would result in significant and unavoidable project-related impacts to regional air quality, as well as increases in regional vehicle-miles traveled. Project-generated emissions would contribute, on a cumulative basis, to existing and future nonattainment conditions within the SJVAB. This impact is, therefore, considered **significant.**

Mitigation measures identified in Impact 3.3-3 would result in reductions in mobile-source pollutants of regional and local concern. With implementation of Mitigation Measure **MM 3.3-3**, the project's contribution to cumulative air quality impacts would be lessened, but not to a less than significant level (i.e., mitigated to levels below the SJVAPCD's recommended significant threshold of 10 tons/year for ROG and 10 tons/year for NO_X) for the extended life of the project. No additional feasible mitigation measures have been identified that would further reduce project-related impacts. Thus, the proposed project's contribution to cumulative regional air quality conditions would be considered **significant and unavoidable**.

In addition to increases in criteria air pollutants, the proposed project would also contribute to increases in greenhouse gas (GHG) emissions that are associated with global

climate change. A large majority of the GHGs attributable to the proposed project would be comprised of carbon dioxide (CO_2) emissions generated by mobile sources. Additional emissions of GHGs would be associated with energy consumption.

The combination of a grocery store with general merchandise in the Wal-Mart Supercenter is anticipated to encourage multi-purpose shopping trips, which is expected to reduce fuel consumption by reducing the number of trips some people might otherwise make between different stores. In addition, the proposed Wal-Mart Supercenter, the largest of the anchor stores within the proposed regional shopping center will be incorporating energy efficient measures into the project design. According to representatives from Wal-Mart, the proposed Wal-Mart Supercenter will be built of nearly 100 percent recycled structural steel. All of the plastic baseboards and much of the plastic shelving would be comprised of 100 percent recycled plastic. The sinks in the restrooms will include sensor-activated low flow toilets. The faucets reduce usage by approximately 84 percent and save approximately 20 percent usage over similar operated systems. Each refrigeration system will include ozone friendly refrigerants. In addition to the energy-saving measures to be incorporated into the proposed project as part of Mitigation Measure 3.3-3, the proposed Wal-Mart Supercenter will incorporate the following energy-related features into the design of the proposed project:

- *Day lighting (skylights/dimming):* The store will include a day lighting system, which automatically and continuously dims all of the lights as the daylight contribution increases.
- *Night Dimming:* The Wal-Mart Supercenter will dim lighting to about 65 percent illumination during the late night/early morning hours.
- *Energy efficient HVAC units:* The Wal-Mart Supercenter will utilize "super" high efficiency packaged HVAC units. While the industry standard EER (Energy Efficiency Ratio) is 9.0, the units that will be utilized at the store are anticipated to be rated at between 10.8 to 13.2. These units range between 4-17 percent more efficient than required by Title 24.
- *Central Energy Management:* The store will be equipped with energy management systems to be monitored and controlled from Wal-Mart's home office in Bentonville, Arkansas. These systems enable Wal-Mart to monitor energy usage and performance at the store 24 hours per day, seven days per week.
- *Water Heating:* The Wal-Mart Supercenter will capture waste heat from the refrigeration equipment to heat water for the kitchen prep areas of the store. This represents energy savings of 165 million British Thermal Unit (BTU's) per year.

- *White Roof:* The Wal-Mart Supercenter will have a "white" membrane roof vs. most retail stores that have a darker color. The high solar reflectivity of this membrane results in lowering the "cooling" load by about 10 percent. No PVC-roofs will be used.

- *Interior Lighting Retrofit Program:* The Wal-Mart Supercenter will utilize T-8 fluorescent lamps and electronic ballasts. The energy load is reduced by approximately 15-20 percent as a result of this upgrade.

- *LED Signage Illumination:* The Wal-Mart Supercenter will use LED lighting in all of the internally illuminated building signage. The application of LED technology is over 70 percent more energy-efficient than fluorescent illumination. With lamp life ranging to 100,000 hours, using LEDs significantly reduces need to manufacture and dispose of fluorescent lamps.

- *Integrally Cooled Concrete Floors:* The use of concrete floors represents a major reduction of carpet and vinyl tile finishes from new Wal-Mart Supercenter stores. This reduces environmental concerns with the manufacture and disposal of PVC, it also reduces the need for most chemical cleaners, wax, and wax strippers. The flooring area for the grocery component of the proposed project would be comprised of colored concrete floors.

The proposed Wal-Mart Supercenter would also be designed and equipped to recycle oil, tires, auto batteries, cardboard, vegetable oil, single use cameras, bottles and cans, plastic waste, electronic waste, and silver from the processing of photos in the photo processing department. Recycling can substantially reduce emissions associated with the manufacturing of such products. Many of the above measures incorporated as part of the design of the WalMart Supercenter have also been incorporated as mitigation measures for the remaining building components/tenants associated with the proposed project. Implementation of the these measures, along with compliance with the California Building Standards and the 2005 California Energy Commission Energy Efficiency Standards, would help to reduce the project's contribution to global GHGs and climate change. No emission thresholds have been established under federal, state or local laws for evaluation of the significance of increases of GHGs associated with proposed urban development projects.

Cumulative Localized Air Quality Impacts

Impact 3.3-8 Project-generated emissions would contribute, on a cumulative basis, to localized increases in pollutant concentrations. This impact is considered **potentially significant.**

As noted in Impacts 3.3-5 implementation of the proposed project would not be anticipated to contribute to localized concentrations of mobile-source CO under future cumulative conditions. In addition, no major sources of odors were identified in the

project vicinity and, given that emissions of odors attributable to the proposed project would be considered less than significant, the project's contribution to cumulative odor impacts would be considered less than significant. However, increased emissions of TACs, though considered less-than-significant on a project-level, may contribute on a cumulative basis to background concentrations of TACs.

As previously discussed, sensitive land uses located in the vicinity of the project site consist primarily of residential land uses. The nearest residential land use is located approximately 0.3 miles south of the project site, approximately 500 feet west of State Route 99. Additional residential dwellings are also located further south and within approximately 200 feet of State Route 99. These sensitive receptors are of particular concern given their proximity to State Route 99 and increased exposure to diesel-exhaust PM associated with on-road heavy-duty truck traffic on this roadway, which is considered the predominant source of TACs in the project area.

To address diesel-exhaust PM from on-road sources, ARB created the Diesel Advisory Committee, which consists of staff from ARB, EPA, state and local agencies, industry representatives, environmental groups, and concerned members of the public. With the assistance of the Diesel Advisory Committee and its subcommittees, ARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (ARB 2000a) and the *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines* (ARB 2000b). ARB approved these plans on September 28, 2000.

ARB is currently in the process of implementing the control measures identified in the diesel particulate matter program. During this control measure phase, specific statewide regulations designed to further reduce emissions of diesel particulate matter from diesel-fueled engines and vehicles will be evaluated and developed. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce emissions of diesel particulate matter. Although the diesel particulate matter program is ongoing, there are already existing regulations that mandate lower emissions of particulate matter from new on-road diesel-fueled vehicles. These regulations will require substantial reductions in particulate matter and other emissions from on-road heavy duty diesel-fueled engines. Additional and more stringent emissions standards will apply to engines starting in the 2007 model year because of the adoption of federal standards at the state level, resulting in particulate matter emissions of less than 0.01 gram per brake horsepower hour (gm/bhp-hr) for these types of engines. In addition to on-road sources, off-road vehicles are also subject to more stringent regulations intended to reduce emissions of diesel-exhaust PM. ARB is currently working on proposed regulations to include a particulate matter reduction requirement, which would require particulate matter emissions to be less than 0.02 gm/bhp-hr for these types of engines. According to ARB, implementation of diesel-exhaust PM emission-reduction

standards will result in overall reductions in associated health risks of approximately 70 percent by 2010 (ARB 2006).

Mitigation measures identified in Impact 3.3-3 would result in reductions in project-related mobile-source pollutants. However, on-road vehicles are regulated by ARB and, as a result, no additional mitigation measures have been identified that would reduce this impact to a less than significant level. Although TACs from on-road vehicles are anticipated to continually decrease in future years due to more stringent regulatory requirements, as discussed above, the proposed project's contribution to cumulative local air quality conditions would be considered **significant and unavoidable** for the foreseeable future.

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Section 3.4
Biological Resources

This section evaluates individual resource and cumulative impact to biological resources resulting from the proposed project. The analysis of biological resources presented in this section is based on a review of the most current project description as well as data collected from onsite survey, maps and available literature. PMC's biologists surveyed the project site on March 3, 2005 and performed a site reconnaissance between August 29th and September 1, 2006 to establish whether San Joaquin kit fox or western burrowing owl actively reproduce onsite. A follow up site reconnaissance was performed within the right-of-way of the proposed interim improvements at the State Route 99/Woollomes Avenue interchange (discussed in **Section 3.12, Traffic and Circulation**) in December of 2006. The results from this site reconnaissance are incorporated herein and are included in Appendix C of this RDEIR.

3.4.1 ENVIRONMENTAL SETTING

The following section describes conditions at the property site with emphasis on biological resources.

REGIONAL SETTING

The project site is located within the City of Delano, Kern County, California. The area to be developed occurs on the McFarland U.S. Geological Survey (USGS) 7.5-minute topographical quadrangle map (Township 25 South, Range 25 East, Section 23) and is shown on **Figure 3.4-1**, **Habitat Map**. As defined by the California Department of Fish and Game (DFG) Wildlife and Habitat Data Analysis Branch, wildlife habitat within Kern County consists of (but is not limited to) forty-five different classifications, including annual grassland, desert scrub, irrigated row and field crop, subalpine conifer, and urban (DFG 2004). **Table 3.4-1, Species Commonly Occurring in Kern County** presents wildlife commonly observed within the county.

LOCAL SETTING

Habitat within the project site consists of approximately 27.8 -acres of annual grassland and 14.1 acres of urban area, as shown in **Figure 3.4-1, Habitat Map**. The immediate surrounding areas are predominantly agricultural as well as urban.

BIOLOGICAL COMMUNITIES

An initial site inspection was conducted on March 3, 2005 by PMC's biologist, to evaluate the existing habitat at the project site. Subsequent site visits were conducted by PMC's biologists in August, September, and November of 2006. Special status wildlife species, sensitive plants and critical habitat expected or known to occur within the general project area are also addressed in this section.

Annual Grassland

In California, annual grassland generally occurs on flat plains to gently rolling foothills throughout the Central Valley, in the coastal mountain ranges to Mendocino County, and in scattered locations in the south portion of the state. Dominant species found within this habitat include introduced grasses such as, brome (*Bromus sp.*), soft chess (*Bromus mollis*), and wild oat (*Avena fatua*). Common forbs associated with annual grassland include clover (*Medicago sp.*), filaree (*Erodium sp.*), and turkey mullein (*Eremocarpus setigerus*) (DFG 2002).

The structure of this habitat varies from year to year based largely on precipitation, season, and presence of livestock. Annual plant seeds are germinated by rain in the fall months. Following these rains, plants grow slowly throughout the winter remaining relatively small until the spring when rising temperature stimulates rapid growth (DFG 2002). Most annuals mature between April and June, although some species, such as tarweed (*Madia sativa*) and turkey mullein, continue to grow into the summer (Heady 1977). Grazing by livestock typically supports a greater abundance of shorter grass (less than 12 inches tall), such as filaree and turkey mullein. Without the presence of livestock, annual grassland generally grows tall (greater than 12 inches) and dense with species such as, ripgut brome (*Bromus rigidus*) and wild oat (Freckman et al. 1979).

Annual grassland noted during the site inspection consisted of invasive or ruderal plant species of varying heights with occasional interspersed patches of bare ground. The property caretaker stated that the open area is plowed annually (and has been for many years) removing most vegetation.

Urban

Urban habitat is distinguished by the presence of both native and exotic species maintained in a relatively static composition within a downtown, residential, or suburban setting. Species richness in these areas depends greatly upon community design (i.e., open space considerations) and proximity to the natural environment (DFG 2002).

The California Wildlife Habitat Relationships (CWHR) system classifies urban habitat into five different vegetation types: tree grove, street strip, shade tree/lawn, lawn, and shrub cover (DFG 2002). Tree groves refer to conditions typically found in city parks, green belts, and cemeteries. These areas vary in tree height, spacing, crown shape, and understory conditions; however, they have a continuous canopy. Street strip vegetation, located roadside, varies with species type, but typically includes a ground cover of grass. Shade trees and lawns refer to characteristic residential landscape, which is reminiscent of natural savannas. Lawns are composed of a variety of grasses, maintained at a uniform height with continuous ground cover through irrigation and fertilization. Shrub cover refers to areas commonly landscaped and maintained with hedges, as typically found in

0 75 150 300 Feet

N

FIGURE 3.4-1
HABITAT MAP

PMC

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commercial districts. All five types of urban habitat are generally found in combination creating considerable edge effect, which can be more valuable to wildlife than any one individual unit (DFG 2002).

The project site includes street strip, shade tree/lawn, lawn and shrub cover.

TABLE 3.4-1
SPECIES COMMONLY OCCURRING IN KERN COUNTY

Common Name	Scientific Name
Amphibians/Reptiles	
common garter snake	*Thamnophis sirtalis*
common kingsnake	*Lampropeltis getula*
common side-blotched lizard	*Uta stansburiana*
gopher snake	*Pituophis catenifer*
Pacific treefrog	*Pseudacris (=Hyla) regilla*
tiger whiptail	*Cnemidophorus tigris*
western fence lizard	*Sceloporus occidentalis*
western rattlesnake	*Crotalus oreganus (=viridis)*
western toad	*Bufo boreas*
Birds	
American avocet	*Recurvirostra americana*
American coot	*Fulica Americana*
American crow	*Corvus brachyrhynchos*
American goldfinch	*Carduelis tristis*
American robin	*Turdus migratorius*
American wigeon	*Anas Americana*
Anna's hummingbird	*Calypte anna*
Bewick's wren	*Thryomanes bewickii*
black phoebe	*Sayornis nigricans*
bushtit	*Psaltriparus minimus*
California gull	*Larus californicus*
California quail	*Callipepla californica*
Canada goose	*Branta Canadensis*
cedar waxwing	*Bombycilla cedrorum*
common raven	*Corvus corax*
double-crested cormorant	*Phalacrocorax auritus*
downy woodpecker	*Picoides pubescens*
European starling	*Sturnus vulgaris*
great blue heron	*Ardea Herodias*
great horned owl	*Bubo virginianus*
greater roadrunner	*Geococcyx californianus*
horned lark	*Eremophila alpestris*
house finch	*Carpodacus mexicanus*
house sparrow	*Passer domesticus*
killdeer	*Charadrius vociferus*

Common Name	Scientific Name
lark sparrow	*Chondestes grammacus*
least sandpiper	*Calidris minutilla*
lesser goldfinch	*Carduelis psaltria*
mallard	*Anas platyrhynchos*
mourning dove	*Zenaida macroura*
northern flicker	*Colaptes auratus*
northern mockingbird	*Mimus polyglottos*
northern pintail	*Anas acuta*
red-tailed hawk	*Buteo jamaicensis*
red-winged blackbird	*Agelaius phoeniceus*
ring-billed gull	*Larus delawarensis*
rock dove	*Columba livia*
snow goose	*Chen caerulescens*
song sparrow	*Melospiza melodia*
spotted towhee	*Pipilo maculates*
tree swallow	*Tachycineta bicolor*
tricolored blackbird	*Agelaius tricolor*
western meadowlark	*Sturnella neglecta*
western scrub-jay	*Aphelocoma californica*
white-crowned sparrow	*Zonotrichia leucophrys*
yellow-rumped warbler	*Dendroica coronata*
Mammals	
big brown bat	*Eptesicus fuscus*
black rat	*Rattus rattus*
black-tailed jackrabbit	*Lepus californicus*
Botta's pocket gopher	*Thomomys bottae*
California ground squirrel	*Spermophilus beecheyi*
California vole	*Microtus californicus*
common raccoon	*Procyon lotor*
coyote	*Canis latrans*
deer mouse	*Peromyscus maniculatus*
desert cottontail	*Sylvilagus audubonii*
Fresno kangaroo rat	*Dipodomys nitratoides exilis*
giant kangaroo rat	*Dipodomys ingens*
house mouse	*Mus musculus*
little brown bat	*Myotis lucifugus*
Norway rat	*Rattus norvegicus*
ornate shrew	*Sorex ornatus*
pallid bat	*Antrozous pallidus*
San Joaquin kit fox	*Vulpes macrotis mutica*
striped skunk	*Mephitis mephitis*
Yuma myotis	*Myotis yumanensis*

Source: DFG. 2002.

SPECIAL STATUS SPECIES

In general, special status species include plants and wildlife that are:

- Listed and protected under the Federal and/or California Endangered Species Acts;
- Listed and protected under other federal and/or state regulations;
- Sufficiently rare to qualify for listing or protection under federal and/or state regulations; or
- Considered unique or in decline by the scientific community.

Table 3.4-2, Listed and Proposed Species Potentially Occurring in the Project Area included in the Technical Appendices of this EIR, lists special status species identified by the U.S. Fish and Wildlife Service (USFWS) that may be affected by projects in Kern County (USFWS 2005a). **Table 3.4-2, Listed and Proposed Species Potentially Occurring in the Project Area** also includes species (if appropriate) identified in the California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) inventory within a nine USGS topographical quadrangle search range of the McFarland quadrangle (DFG 2003 and CNPS 2005). Quadrangles included in the data search were Deepwell Ranch, Delano East, Delano West, Famoso, McFarland, North of Oildale, Pond, Richgrove, and Wasco. Species listed as being unlikely to occur within the project site are considered to be beyond their known range or to have low habitat suitability for reproduction, cover, and/or foraging. **Figure 3.4-2, Recorded Occurrences of Special-Status Species Within One Mile of the Project Site** shows locations of occurrences of special status species within a one-mile radius of the project site.

Species potentially needing further study, based on the analysis presented in **Table 3.4-2, Listed and Proposed Species Potentially Occurring in the Project Area** are listed in **Table 3.4-3, Listed and Proposed Species Potentially Occurring in the Project Area Potentially Needing Study**. These species are also addressed in the following pages.

LISTED AND SPECIAL STATUS PLANTS

As shown on **Figure 3.4-2**, **Recorded Occurrences of Special-Status Species Within 1 Mile of Project Site** two special status plant species (California jewel-flower [Caulanthus californicus] and Earlimart orache [Atriplex erecticaulis]) occur within one mile of the project area. Both of these species have the potential to occur in annual grassland. However, according to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A reconnaissance survey of the project site found predominately ruderal plant species and no special status plant species. Therefore, neither California jewel-flower or Earlimart orache have the potential for occurrence within the project site.

Table 3.4-2
Listed and Proposed Species Potentially Occurring in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
Plants						
alkali mariposa lily	*Calochortus striatus*	FSC;--;1B	Chaparral, chenopod scrub, mojavean desert scrub, meadows; alkaline meadows and ephemeral washes.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely alkali mariposa lily would be present within the project area.	No
aromatic canyon gooseberry	*Ribes menziesii var. ixoderme*	--;--;1B;SLC	Chaparral, cismontane woodland; in forest openings.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely aromatic canyon gooseberry would be present within the project area.	No
Bakersfield cactus	*Opuntia basilaris var. treleasei*	FE;CE;1B	Chenopod scrub, valley and foothill grassland, cismontane woodland; coarse or cobbly well-drained granitic sand on bluffs, low hills, and flats within grassland.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Bakersfield cactus would be present at the project location.	No
Bakersfield saltbush (=smallscale)	*Atriplex tularensis*	--;CE;1B	Chenopod scrub, alkali meadow; historically in valley sink scrub or with saltgrass.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Bakersfield saltbush would be present at the project location.	No
brittlescale	*Atriplex depressa*	FSC;--;1B	Chenopod scrub, meadows, playas, valley and foothill grassland, vernal pools; usually in alkali scalds or alkaline clay in meadows or annual grassland; rarely associated with riparian, marshes, or vernal pools.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely brittlescale would be present at the project location.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
Cache Peak (=Kern) buckwheat	*Eriogonum kennedyi var. pinicola*	FSC;–;1B	Chaparral, pinyon and juniper woodland; open places on clay soil.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Cache Peak buckwheat would be present within the project area.	No
calico monkeyflower	*Mimulus pictus*	FSC;–;1B	Broadleaved upland forest, cismontane woodland; in bare ground around gooseberry bushes or around granite rock outcrops.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely calico monkeyflower would be present at the project location.	No
Caliente (=Vasek's) clarkia	*Clarkia tembloriensis ssp. calientensis*	FSC;–;1B	Valley and foothill grassland; north-facing slopes with *Isomeris*, and other clarkia species.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Caliente clarkia would be present at the project location.	No
California jewel-flower	*Caulanthus californicus*	FE;CE;1B	Chenopod scrub, valley and foothill grassland, pinyon juniper woodland; historical from various valley habitats in both the Central Valley and Carrizo Plain.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely California jewel-flower would be present at the project location.	No
California pterygoneurum (=chalk) moss	*Pterygoneurum californicum*	FSC;–;1B	Chenopod scrub, alkali playas, valley and foothill grassland; moss growing on alkali soil.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely California pterygoneurum moss would be present at the project location.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
California tortula (=screw) moss	*Tortula californica*	--;--;1B;SLC	Chenopod scrub, valley and foothill grassland; moss growing on sandy soil.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely California tortula moss would be present at the project location.	No
Carrizo (=Jared's) peppergrass	*Lepidium jaredii var. jaredii*	FSC;--;1B	Valley and foothill grassland; alkali flats and sinks; sandy, alkaline, sometimes adobe soils.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Carrizo peppergrass would be present at the project location.	No
Charlotte's phacelia	*Phacelia nashiana*	FSC;--;1B	Joshua tree woodland, mojavean desert scrub, pinyon juniper woodland; granitic soils, sandy or rocky areas on steep slopes or flats.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Charlotte's phacelia would be present at the project location.	No
Comanche Point layia	*Layia leucopappa*	FSC;--;1B	Chenopod scrub, valley and foothill grassland; dry hills in white-grey clay soils, often with weedy grasses.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Comanche Point layia would be present at the project location.	No
diamond-petaled California poppy	*Eschscholzia rhombipetala*	FSC;--;1B	Valley and foothill grassland; alkaline, clay slopes and flats.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
					is unlikely diamond-petaled California poppy would be present at the project location.	
dwarf calycadenia	*Calycadenia villosa*	--;--;1B;SLC	Chaparral, cismontane woodland, valley and foothill grassland, meadows and seeps; open, dry meadows, hillsides, gravelly outwashes.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely dwarf calycadenia would be present at the project location.	No
Earlimart orache (=erectstem saltbush)	*Atriplex erecticaulis*	--;--;1B;SLC	Valley and foothill grassland.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Earlimart orache would be present at the project location.	No
flax-like monardella	*Monardella linoides ssp. oblonga*	FSC;--;1B	Lower montane coniferous forest, upper montane coniferous forest, pinyon juniper woodland; on dry slopes of yellow pine forest, decomposed granitic soils; also in roadside disturbed areas.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely flax-like monardella would be present at the project location.	No
forked fiddleneck	*Amsinckia vernicosa var. furcata*	--;--;4;SLC	Cismontane woodland, valley and foothill grassland; often on shale outcrops in disturbed, rather open sites; often in gypsum-affected soils.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely forked fiddleneck would be present at the project location.	No
Fort Tejon woolly-sunflower	*Eriophyllum lanatum var. hallii*	FSC;--;1B	Chaparral, cismontane woodland; often on slopes in	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Fort Tejon woolly-sunflower would be	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			loamy soils.		present at the project location.	
Gairdner's yampah	*Perideridia gairdneri ssp. gairdneri*	FSC;--;4	Broadleaved upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools; adobe flats or grasslands, wet meadows and vernal pools, under *Pinus radiata* along the coast; mesic sites.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Gairdner's yampah would be present at the project location.	No
Greenhorn (=striped) adobe-lily	*Fritillaria striata*	--;CT;1B	Cismontane woodland, valley and foothill grassland; heavy clay adobe soils in oak grassland.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Greenhorn adobe-lily would be present at the project location.	No
Hall's tarplant	*Deinandra halliana*	FSC;--;1B	Cismontane woodland, chenopod scrub, valley and foothill grassland; reported from a variety of substrates including, clay, sand, and alkaline soils.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Hall's tarplant would be present at the project location.	No
heartscale	*Atriplex cordulata*	FSC;--;1B	Chenopod scrub, valley and foothill grassland, meadows; alkaline flats and scalds in the Central Valley; sandy soils.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely heartscale would be present at the project location.	No
hispid bird's-beak	*Cordylanthus mollis ssp. hispidus*	FSC;--;1B	Meadows, playas, valley and foothill grassland; in damp alkaline soils, especially in	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			alkaline meadows and alkali sinks with *Distichlis*.		reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely hispid bird's-beak would be present at the project location.	
Hoover's eriastrum (=woolly-star)	*Eriastrum hooveri*	FD;–;4	Chenopod scrub, valley and foothill grassland, pinyon and juniper woodland; on sparsely vegetated alkaline alluvial fans; also in the Temblor Range on sandy soils.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Hoover's eriastrum would be present at the project location.	No
interior California (Hospital Canyon) larkspur	*Delphinium californicum ssp. interius*	FSC;–;1B	Cismontane woodland, chaparral; in wet, boggy meadows, openings in chaparral and in canyons.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely interior California larkspur would be present at the project location.	No
Keck's checker-mallow (=checkerbloom)	*Sidalcea keckii*	FE;–;1B;PX	Cismontane woodland, valley and foothill grassland; grassy slopes in blue oak woodland.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Keck's checker-mallow would be present at the project location.	No
Kelso Creek monkeyflower	*Mimulus shevockii*	FSC;–;1B	Joshua tree woodland, pinyon juniper woodland; mostly known from Joshua tree-xeric conifer woodland in the high desert; in loose, granitic sandy soil.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Kelso Creek monkeyflower would be present at the project location.	No
Kern Canyon clarkia	*Clarkia xantiana ssp. parviflora*	–;–;1B;SLC	Cismontane woodland; dry slopes.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Kern Canyon clarkia would be present at the project location.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
Kern mallow	*Eremalche kernensis*	FE;--;1B	Chenopod scrub, valley and foothill grassland; on dry, open sandy to clayey soils; usually within valley saltbush scrub; often at the edge of balds.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Kern mallow would be present at the project location.	No
Kernville poppy	*Eschscholzia procera*	FSC;--;3	Cismontane woodland; sandy floodplain; collections also from decomposed granite, limestone, and metamorphics.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Kernville poppy would be present at the project location.	No
King's gold	*Twisselmannia californica*	FSC;--;1B	Chenopod scrub.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely King's gold would be present at the project location.	No
Lemmon's jewelflower	*Caulanthus coulteri var. lemmonii*	--;--;1B;SLC	Pinyon-juniper woodland, valley and foothill grassland.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Lemmon's jewelflower would be present at the project location.	No
lesser saltscale	*Atriplex minuscula*	FSC;--;1B	Chenopod scrub, playas, valley and foothill grassland; in alkali sink and grassland in sandy, alkaline soils.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely lesser saltscale would be present at the project location.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
Lost Hills saltbush (=crownscale)	*Atriplex vallicola*	FSC;–;1B	Chenopod scrub, valley and foothill grassland, vernal pools; in powdery, alkaline soils that are vernally moist with *Frankenia, Atriplex spp.,* and *Distichlis*.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Lost Hills saltbush would be present at the project location.	No
Madera linanthus	*Linanthus serrulatus*	–;–;–;SLC	Foothill woodland, yellow pine forest; 1,000 to 4,000 feet elevation.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Madera linanthus would be present at the project location.	No
Mason's neststraw	*Stylocline masonii*	FSC;–;1B	Chenopod scrub, pinyon-juniper woodland; sandy washes.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Mason's neststraw would be present at the project location.	No
Munz's tidy-tips	*Layia munzii*	FSC;–;1B	Chenopod scrub, valley and foothill grassland; hillsides, in white-grey alkaline clay soils, with grasses and chenopod scrub associates.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Munz's tidy-tips would be present at the project location.	No
Nine Mile Canyon phacelia	*Phacelia novenmillensis*	FSC;–;1B	Broadleaved upland forest, pinyon-juniper woodland, upper montane coniferous forest, cismontane woodland; dry disturbed banks, granitic or metamorphic soils.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Nine Mile Canyon phacelia would be present at the project location.	No
oil neststraw	*Stylocline citroleum*	FSC;–;1B	Chenopod scrub, coastal scrub; flats, clay soils in oil-producing areas.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely oil neststraw would be present at the project location.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
Owens Peak lomatium	*Lomatium shevockii*	FSC;–;1B	Lower montane coniferous forest, upper montane coniferous forest; in colluvial slopes and talus, usually along contact zones of metamorphic and granitic rock.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Owens Peak lomatium would be present at the project location.	No
pale-yellow layia	*Layia heterotricha*	FSC;–;1B	Pinyon-juniper woodland, valley and foothill grassland; many historical, extirpated occurrences; alkaline or clay soils; open areas.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely pale-yellow layia would be present at the project location.	No
Palmer's mariposa lily	*Calochortus palmeri var. palmeri*	FSC;–;1B	Meadows and seeps, chaparral, lower montane coniferous forest; vernally moist places in yellow-pine forest, chaparral.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Palmer's mariposa lily would be present at the project location.	No
Panoche peppergrass	*Lepidium jaredii var. album*	FSC;–;1B	Valley and foothill grassland; alkali bottoms, slopes, washes, alluvial fans; clay and gypsum-rich soils.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Panoche peppergrass would be present at the project location.	No
Piute (=Breedloves's) buckwheat	*Eriogonum breedlovei var. breedlovei*	FSC;–;1B	Upper montane coniferous forest, pinyon-juniper woodland; often on limestone or dolomite soils.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Piute buckwheat would be present at the project location.	No
Piute cypress	*Cupressus nevadensis*	FSC;–;1B	Closed-cone coniferous forest, chaparral, cismontane woodland, pinyon-juniper woodland; on dry slopes; known from granodiorite,	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Piute cypress would be present at the project location.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			gabbro, and limestone.			
Piute Mountains jewelflower	*Streptanthus cordatus var. piutensis*	FSC;--;1B	Broadleaved upland forests, closed-cone coniferous forest, pinyon-juniper woodland; along roadbanks and cliffs, metamorphic-red clay soils.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Piute Mountains jewelflower would be present at the project location.	No
Piute Mountains navarretia	*Navarretia setiloba*	FSC;--;1B	Cismontane woodland, pinyon-juniper woodland, valley and foothill grassland; red clay soils, other clay soils, or on gravelly loam.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Piute Mountains navarretia would be present at the project location.	No
recurved larkspur	*Delphinium recurvatum*	FSC;--;1B	Chenopod scrub, valley and foothill grassland, cismontane woodland; on alkaline soils; often in valley saltbush or valley chenopod scrub.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely recurved larkspur would be present at the project location.	No
red rock (=Twisselmann's dwarf) poppy	*Eschscholzia minutiflora ssp. twisselmannii*	FSC;--;1B	Mojave desert scrub; volcanic tuff; with *Larrea, Lycium, Eriogonum, Isomeris,* and *Hemizonia*.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely red rock poppy would be present at the project location.	No
San Joaquin adobe sunburst	*Pseudobahia peirsonii*	FT;CE;1B	Valley and foothill grassland, cismontane woodland; grassy valley floors and rolling foothills in heavy clay soil.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely San Joaquin adobe sunburst would be present at the project location.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
San Joaquin woollythreads	*Monolopia congdonii (=Lembertia congdonii)*	FE;--;1B	Chenopod scrub and valley and foothill grassland; alkaline or loamy plains; sandy soils, often with grasses and within chenopod scrub.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely San Joaquin woollythreads would be present at the project location.	No
Shirley Meadows mariposa lily (=star-tulip)	*Calochortus westonii*	FSC;--;1B	Broadleaved upland forest, lower montane coniferous forest, meadows; open woodlands and meadows; granite substrates.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Shirley Meadows mariposa lily would be present at the project location.	No
showy (=golden) madia	*Madia radiata*	FSC;--;1B	Valley and foothill grassland, cismontane woodland, chenopod scrub; mostly on adobe clay in grassland or among shrubs.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely showy madia would be present at the project location.	No
slough thistle	*Cirsium crassicaule*	FSC;--;1B	Chenopod scrub, marshes and swamps, riparian scrub; sloughs, riverbanks, and marshy areas.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely slough thistle would be present at the project location.	No
subtle orache	*Atriplex subtilis*	--;--;1B;SLC	Valley and foothill grassland; little information available.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely subtle orache would be present at the project location.	No
Tejon poppy	*Eschscholzia lemmonii spp.*	FSC;--;1B	Valley and foothill grassland; little information available on	Unlikely	According to the property caretaker, the project site has been plowed annually for many years	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
	kernensis		habitat.		removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Tejon poppy would be present at the project location.	
Temblor buckwheat	*Eriogonum temblorense*	FSC;--;1B	Valley and foothill grassland; barren clay or sandstone substrates.	Unlikely	According to the property caretaker, the project site has been plowed annually for many years removing existing vegetation. A site reconnaissance survey of the area found predominately ruderal plant species. Therefore, it is unlikely Temblor buckwheat would be present at the project location.	No
Twisselmann's nemacladus	*Nemacladus twisselmannii*	FSC;CR;1B	Upper montane coniferous forest; sandy or rocky granitic soils, open ridgetops and gentle slopes in Jeffrey pine forest.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Twisselmann's nemacladus would be present at the project location.	No
Walker Pass (=Ertter's) milk-vetch	*Astragalus ertterae*	FSC;--;1B	Pinyon-juniper woodland; sandy, gravelly soil in pinyon pine-canyon oak woodland.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Walker Pass milk-vetch would be present at the project location.	No
Yosemite lewisia	*Lewisia disepala*	FSC;--;1B	Lower montane coniferous forest, pinyon-juniper woodland, upper montane coniferous forest; fine gravel on rock outcrops, ridges, or domes; granitic soils.	Unlikely	Habitat at the project site does not typically support growth of this species. Therefore, it is unlikely Yosemite lewisia would be present at the project location.	No
Invertebrates						
California linderiella fairy shrimp	*Linderiella occidentalis*	FSC;--;--	Seasonal pools in unplowed grasslands with alluvial soils underlain by hardpan or in sandstone depressions; water in the pools has very low alkalinity,	Unlikely	No vernal pools or swales were indicated onsite during the site reconnaissance visit. In addition, the property caretaker asserts that the project site has been plowed annually for many years, which would have degraded any pre-existing vernal	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			conductivity, and total dissolved solids.		pools. Therefore, it is unlikely California linderiella fairy shrimp would be present at the project location.	
Hopping's blister beetle	*Lytta hoppingi*	FSC;--;--	Inhabits the foothills at the southern end of the Central Valley.	Unlikely	The project site is located outside the known geographic range for this species. Therefore, it is unlikely Hopping's blister beetle would be present at the project location.	No
Kern primrose sphinx moth	*Euproserpinus euterpe*	FT;--;--	Endemic to the sandy, alluvial soils of Walker Basin, Kern County; host plant is Camissonia contorta epilobioides (evening primrose).	Unlikely	The project site is located outside the known geographic range for this species. Therefore, it is unlikely Kern primrose sphinx moth would be present at the project location.	No
Kern shoulderband snail	*Helminthoglypta callistoderma*	FSC;--;--	Known only from Tulare and Kern Counties, along the lower Kern River canyon; has been collected from dead vegetation along the water's edge.	Unlikely	The project site is located outside the known geographic range for this species. Therefore, it is unlikely Kern shoulderband snail would be present at the project location.	No
longhorn fairy shrimp	*Branchinecta longiantenna*	FE;--;X	Endemic to the eastern margin of the Central Coast Mountains in seasonally astatic grassland vernal pools; inhabit small, clear-water depressions in sandstone and clear-to-turbid clay/grass-bottomed pools in shallow swales.	Unlikely	No vernal pools or swales were indicated onsite during the site reconnaissance visit. In addition, the property caretaker asserts that the project site has been plowed annually for many years, which would have degraded any pre-existing vernal pools. Therefore, it is unlikely longhorn fairy shrimp would be present at the project location.	No
moestan blister beetle	*Lytta moesta*	FSC;--;--	Central California.	Possible	The biology of this species is poorly known to date. The beetle is presumed to be extant throughout portions of its historical range in annual grassland, foothill woodland, and saltbush scrub. Therefore, it is possible moestan blister beetle would be present at the project location. However, this beetle is excluded from analysis	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
					because loss of 2.6 acres of annual grassland (from implementation of the proposed project) is not expected to significantly impact the species population.	
molestan blister beetle	*Lytta molesta*	FSC;--;--	Inhabits the Central Valley of California, from Contra Costa to Kern and Tulare Counties.	Possible	The biology of this species is poorly known to date. The beetle is presumed to be extant throughout portions of its historical range in annual grassland, foothill woodland, and saltbush scrub. Therefore, it is possible molestan blister beetle would be present at the project location. However, this beetle is excluded from analysis because loss of 2.6 acres of annual grassland (from implementation of the proposed project) is not expected to significantly impact the species population.	No
Morrison's blister beetle	*Lytta morrisoni*	FSC;--;--	Inhabitant of the Central Valley of California.	Possible	The biology of this species is poorly known to date. Therefore (based on historical geography), it is possible Morrison's blister beetle would be present at the project location. However, this beetle is excluded from analysis because loss of 2.6 acres of annual grassland (from implementation of the proposed project) is not expected to significantly impact the species population.	No
San Emigdio blue butterfly	*Plebulina emigdionis*	FSC;--;--	Found in desert canyons and along riverbeds on the southernmost edge of the San Joaquin Valley; hostplant is *Atriplex canescens*; maybe *Lotus purshianus* also.	Unlikely	This species is not typically found in habitat observed at the project site. Therefore, it is unlikely San Emigdio blue butterfly would be present at the project location.	No
Tehachapi mountain	*Speyeria egleis*	FSC;--;--	Mixed woodlands, open rocky slopes, meadows, and	Unlikely	This species is not typically found in habitat observed at the project site. Therefore, it is	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
silverspot butterfly	*tehachapina*		streambanks.		unlikely Tehachapi mountain silverspot butterfly would be present at the project location.	
valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT;--;--	In association with blue elderberry (*Sambucus mexicana*); prefers to lay eggs in elderberries two to eight inches in diameter; some preference shown for "stressed" elderberries (occurs only in the Central Valley of California).	Unlikely	No elderberry bushes were observed on or immediately adjacent to the project location. Therefore, it is unlikely valley elderberry longhorn beetle would be present onsite.	No
vernal pool fairy shrimp	*Branchinecta lynchi*	FT;--;X	In astatic rain-filled pools; inhabits small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools (endemic to the grasslands of the Central Valley, Central Coast Mountains, and South Coast Mountains).	Unlikely	No vernal pools or swales were indicated onsite during the site reconnaissance visit. In addition, the property caretaker asserts that the project site has been plowed annually for many years, which would have degraded any pre-existing vernal pools. Therefore, it is unlikely vernal pool fairy shrimp would be present at the project location.	No
Fish						
delta smelt	*Hypomesus transpacificus*	FT;CT;--	Sacramento-San Joaquin Delta; seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay; seldom found at salinities greater than 10 parts per trillion; most often at salinities less than 2 parts per trillion.	Unlikely	No wetlands or waterways exist on or adjacent to the project site. Therefore, it is unlikely the proposed project would impact delta smelt.	No
Kern brook lamprey	*Lampetra hubbsi*	FSC;CSC;--	San Joaquin River system and Kern River; gravel-bottomed areas for spawning and muddy-bottomed areas where	Unlikely	No wetlands or waterways exist on or adjacent to the project site. Therefore, it is unlikely the proposed project would impact Kern brook lamprey.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			Ammocoetes can burrow and feed.			
Kern River rainbow trout	*Oncorhynchus (=Salmo) mykiss gilberti*	FSC;CSC;--	Endemic to the upper Kern River and its tributaries; cool, clear, fast flowing streams where riffles are abundant.	Unlikely	No wetlands or waterways exist on or adjacent to the project site. Therefore, it is unlikely the proposed project would impact Kern River rainbow trout.	No
longfin smelt	*Spirinchus thaleichthys*	FSC;CSC;--	Euryhaline, nektonic, and anadromous; found in open waters of estuaries, mostly in the middle or bottom of water column; prefers salinities of 15 to 30 parts per trillion, but can be found in completely freshwater to almost pure seawater.	Unlikely	No wetlands or waterways exist on or adjacent to the project site. Therefore, it is unlikely the proposed project would impact longfin smelt.	No
Sacramento splittail	*Pogonichthys macrolepidotus*	FSC;CSC;--	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay, and associated marshes; slow moving river sections, dead end sloughs; requires flooded vegetation for spawning and foraging for young.	Unlikely	No wetlands or waterways exist on or adjacent to the project site. Therefore, it is unlikely the proposed project would impact Sacramento splittail.	No
Amphibians and Reptiles						
blunt-nosed leopard lizard	*Gambelia (=Crotaphytus) sila*	FE;CE;--	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief; seeks cover in mammal burrows, under shrubs or structures such as fence posts; they do not excavate their own burrows.	Possible	Habitat at the project location is moderately suitable for reproduction, cover, and foraging by this species, so occurrence onsite is possible. However, vegetation at the project site was determined (during the site visit) to be too dense and tall for this species to be present. Therefore, blunt-nosed leopard lizard is excluded from further analysis.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
Breckenridge Mountain slender salamander	*Batrachoseps sp.*	FSC;CSC;--	Known only from a single location near Squirrel Meadow on Breckenridge Mountain, Kern County; found in a seep with a sandy loam substrate; rotting logs and rocks are used as cover.	Unlikely	The project site is located outside the known geographic range for this species. Therefore, it is unlikely Breckenridge Mountain slender salamander would be present at the project location.	No
California red-legged frog	*Rana aurora draytonii*	FT;CSC;PX	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation; requires 11 to 20 weeks of permanent water for larval development; must have access to estivation habitat.	Unlikely	Annual grassland is moderately suitable for reproduction, cover, and foraging by this species. However, it is unlikely the California red-legged frog would be present onsite due to the lack of permanent water at and in the vicinity of the project location.	No
California tiger salamander	*Ambystoma californiense*	FT;CSC;PX	Species now listed as threatened statewide; populations in Santa Barbara and Sonoma Counties formerly listed as endangered; need underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	Unlikely	Annual grassland is moderately to highly suitable for reproduction, cover, and foraging by this species. However, it is unlikely the California tiger salamander would be present onsite due to annual disturbance of the area (plowing) and the absence of seasonal water at and in the vicinity of the project location.	No
coast (California) horned lizard	*Phrynosoma coronatum (frontale)*	FSC;CSC;--	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes; open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Unlikely	Annual grassland provides low suitability for this species to reproduce, find cover, and forage. Therefore, it is unlikely coast horned lizard would be present at the project location.	No
foothill yellow-legged frog	*Rana boylii*	FSC;CSC;--	Partly-shaded, shallow streams and riffles with a rocky substrate	Unlikely	No wetlands or waterways were observed at or directly adjacent to the project location during the	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			in a variety of habitats; needs at least some cobble-sized substrate for egg-laying; needs at least 15 weeks to attain metamorphosis.		site reconnaissance. Additionally, annual grassland provides low suitability for this species to reproduce, find cover, and forage. Therefore, it is unlikely foothill yellow-legged frog would be present at the project location.	
giant garter snake	*Thamnophis gigas*	FT;CT;--	Prefers freshwater marsh and low gradient streams; has adapted to drainage canals and irrigation ditches; this is the most aquatic of the garter snakes in California.	Unlikely	No wetlands or waterways were observed at or directly adjacent to the project location during the site reconnaissance. Additionally, annual grassland provides low suitability for this species to reproduce, find cover, and forage. Therefore, it is unlikely giant garter snake would be present at the project location.	No
Kern Canyon slender salamander	*Batrachoseps simatus*	--;CT;--	Only in the lower Kern River canyon in valley foothill hardwood, valley foothill hardwood conifer, and mixed chaparral; found under downed pine, oak and chaparral scrub logs, as well as under rocks and talus on steep, north-facing slopes.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely Kern Canyon slender salamander would occur at the project site.	No
mountain yellow-legged frog	*Rana muscosa*	FC;CSC;--	Federal listing refers to populations in the San Gabriel, San Jacinto, and San Bernardino Mountains only; always encountered within a few feet of water; tadpoles may require up to 2 years to complete their aquatic development.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely mountain yellow-legged frog would occur at the project site.	No
northwestern pond turtle	*Emys (=Clemmys) marmorata marmorata*	FSC;CSC;--	Associated with permanent or nearly permanent water in a wide variety of habitats; requires	Unlikely	Annual grassland provides moderate suitability for this species to reproduce, find cover, and forage. However, no wetlands or waterways were	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			basking sites; nests sites may be found up to 0.5 kilometers from water.		observed at or directly adjacent to the project location during the site reconnaissance. Therefore, it is unlikely northwestern pond turtle would occur onsite.	
relictual slender salamander	*Batrachoseps relictus (=pacificus)*	FSC;CSC;--	Mixed coniferous forest on the western slope of southern Sierra Nevada between Kings River drainage and Kern River canyon; usually found under boards, rotting logs, rocks and surface litter; surface activity limited to rainy winter months.	Unlikely	The project site is located outside the known geographic range for this species. Furthermore, annual grassland provides low suitability for this species to reproduce, find cover, and forage. Therefore, it is unlikely relictual slender salamander would be present at the project location.	No
rosy boa	*Charina trivirgata*	FSC;--;--	Desert and chaparral from the coast to the Mojave and Colorado Deserts; prefers moderate to dense vegetation and rocky cover; habitats with a mix of brushy cover and rocky soil such as coastal canyons and hillsides, desert canyons, washes, and mountains.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely rosy boa would occur at the project site.	No
San Joaquin coachwhip (=whipsnake)	*Masticophis flagellum ruddocki*	FSC;CSC;--	Open, dry habitats with little or no tree cover; found in valley grassland and saltbush scrub in the San Joaquin Valley; needs mammal burrows for refuge and oviposition sites.	Unlikely	Annual grassland provides low suitability for this species to reproduce, find cover, and forage. Therefore, it is unlikely San Joaquin coachwhip would be present at the project location.	No
Sierra night lizard	*Xantusia vigilis sierrae*	FSC;CSC;--	Only on the western edge of the Grenhorn Mountains in Kern County in small granite outcrops in open grassland or oak woodland; found under	Unlikely	The project site is located outside the known geographic range for this species. Furthermore, annual grassland provides low suitability for this lizard to reproduce, find cover, and forage. Therefore, it is unlikely Sierra night lizard would	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			exfoliating granite caps and flakes.		occur at the project location.	
silvery legless lizard	*Anniella pulchra pulchra*	FSC;CSC;--	Sandy or loose loamy soils under sparse vegetation; soil moisture is essential; they prefer soils with a high moisture content.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely silvery legless lizard would occur at the project site.	No
southern rubber boa	*Charina bottae umbratica*	--;CT;--	Restricted to the San Bernardino and San Jacinto Mountains; found in a variety of montane forest habitats; found in vicinity of streams or wet meadows; requires loose, moist soil for burrowing; seeks cover in rotting logs.	Unlikely	The project site is located outside the known geographic range for this species. Furthermore, habitat at the project location is not typically suitable for this snake to reproduce, find cover, or forage. Therefore, it is unlikely southern rubber boa would be present onsite.	No
southwestern pond turtle	*Emys (=Clemmys) marmorata pallida*	FSC;CSC;--	Inhabits permanent or nearly permanent bodies of water in many habitat types; below 6,000 foot elevation; requires basking sites such as partially submerged logs, vegetation mats, or mud bank; need suitable nesting sites.	Unlikely	Annual grassland provides moderate suitability for this species to reproduce, find cover, and forage. However, no wetlands or waterways were observed at or directly adjacent to the project location during the site reconnaissance. Therefore, it is unlikely southwestern pond turtle would occur onsite.	No
Tehachapi slender salamander	*Batrachoseps stebbinsi*	--;CT;--	Valley foothill hardwood-conifer and valley foothill riparian in the Piute and Tehachapi Mountains of Kern County; prefers wet talus slopes or log-strewn hillsides with a steep, north-facing exposure.	Unlikely	The project site is located outside the known geographic range for this species. Furthermore, habitat at the project location is not typically suitable for this salamander to reproduce, find cover, or forage. Therefore, it is unlikely Tehachapi slender salamander would be present onsite.	No
western spadefoot toad	*Spea (=Scaphiopus) hammondii*	FSC;CSC;--	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands; vernal pools are	Unlikely	Annual grassland provides moderate to high suitability for this species to reproduce, find cover, and forage. However, no wetlands or waterways were observed at or directly adjacent to the project	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			essential for breeding and egg-laying.		location during the site reconnaissance. Therefore, it is unlikely western spadefoot toad would occur onsite.	
yellow-blotched salamander	*Ensatina eschscholtzii croceator*	FSC;CSC;--	Forests and well shaded canyons, as well as oak woodlands and old chaparral; need surface objects, such as logs, boards, and rocks; also need old rodent burrows or other underground retreats.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely yellow-blotched salamander would occur at the project site.	No
Birds						
Aleutian Canada goose	*Branta canadensis leucopareia*	FD;--;--	(Wintering) Winters on lakes and inland prairies; forages on natural pasture or that cultivated to grain; loafs on lakes, reservoirs, ponds.	Likely	Habitat at the project site is highly suitable for cover and foraging by this species during the winter. Therefore, it is likely Aleutian Canada geese would occur at the project location. However, this bird is excluded from analysis because loss of 2.6 acres of annual grassland (from implementation of the proposed project) is not expected to significantly impact the species population.	No
American dipper	*Cinclus mexicanus*	--;--;SLC	Rushing mountain streams and high-elevation lakes.	Possible	Urban habitat provides high suitability for this species to reproduce, find cover, and forage. Because fast water, an essential element for this species, is absent from the project area, it is merely possible American dipper occurs onsite. Furthermore, this bird is excluded from analysis because loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
American peregrine falcon	*Falco peregrinus anatum*	FD;CE;--	(Nesting) Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures; nest	Likely	Habitat at the project site is highly suitable for reproduction, cover, and foraging by this species. Therefore, it is likely American peregrine falcon would occur at the project location. However, this	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			consists of a scrape on a depression or ledge in an open site.		bird is excluded from analysis due to the lack of cliffs and water features onsite. Additionally, loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	
bald eagle	*Haliaeetus leucocephalus*	FT;CE;--	(Nesting and Wintering) Ocean shore, lake margins, and rivers for both nesting and wintering; most nests within one mile of water; nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine; roosts communally in winter.	Unlikely	Annual grassland provides low suitability for this species to forage during the winter. Therefore, it is unlikely bald eagle would occur at the project location.	No
black swift	*Cypseloides niger*	FSC;CSC;--	(Nesting) Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above surf; forages widely (coastal belt of Santa Cruz and Monterey Counties; central and southern Sierra Nevada; San Bernardino and San Jacinto Mountains).	Possible	Habitat at the project site is moderately suitable for this species to forage during the summer. Therefore, it is possible black swift occur at the project site. However, this bird is excluded from analysis, because loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
California condor	*Gymnogyps californianus*	FE;CE;X	Requires vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude; deep canyons containing clefts in the rocky walls provide nesting sites; forages up to 100 miles from roost/nest.	Likely	Annual grassland provides high suitability for this species to forage. Therefore, it is likely California condor would occur at the project location. However, this bird is excluded from analysis because loss of 2.6 acres of annual grassland (from implementation of the proposed project) is not expected to significantly impact the species population.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
California spotted owl	*Strix occidentalis occidentalis*	FSC;CSC;--	Mixed conifer forest, often with an understory of black oaks and other deciduous hardwoods; canopy closure greater than 40 percent; most often found in deep-shaded canyons, on north-facing slopes, and within 300 meters of water.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely California spotted owl would occur at the project site.	No
California thrasher	*Toxostoma redivivum*	FSC;--;--	Chaparral.	Possible	Urban habitat is moderately suitable for reproduction, cover, and foraging by this species. Therefore, it is possible California thrasher would occur at the project location. However, this bird is excluded from analysis, because loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
Costa's hummingbird	*Calypte costae*	FSC;--;--	Desert areas.	Likely	Urban habitat is highly suitable for reproduction, cover, and foraging by this species. Therefore, it is likely Costa's hummingbird would occur at the project location. However, this bird is excluded from analysis, because loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
ferruginous hawk	*Buteo regalis*	FSC;CSC;--	(Wintering) Open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon-juniper habitats; mostly eats lagomorphs, ground squirrels, and mice; population trends may follow lagomorph population cycles.	Likely	Annual grassland provides high suitability for this species to forage during the winter. Therefore, it is likely Ferruginous hawk would occur at the project location. However, this bird is excluded from analysis, because loss of 2.6 acres of annual grassland (from implementation of the proposed project) is not expected to significantly impact the species population.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
flammulated owl	*Otus flammeolus*	FSC;--;--	Coniferous woodlands and forest edges in the northwest; dry ponderosa pine woods in the southwest.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely flammulated owl would occur at the project site.	No
greater sandhill crane	*Grus canadensis tabida*	--;CT;--	(Nesting and wintering) Nests in wetland habitats in northeastern California; winters in the Central Valley; prefer grain fields within 4 miles of a shallow body of water used as a communal roost site; irrigated pasture used as loaf sites.	Possible	Annual grassland provides low to moderate suitability for this species to find cover and forage during the winter. Therefore, it is possible greater sandhill crane would occur at the project location. However, this bird is excluded from analysis, because loss of 2.6 acres of annual grassland (from implementation of the proposed project) is not expected to significantly impact the species population.	No
Lawrence's goldfinch	*Carduelis lawrencei*	FSC;--;--	(Nesting) Nests in open oak or other arid woodland and chaparral, near water; nearby herbaceous habitats used for feeding; closely associated with oaks.	Possible	Habitat at the project location is moderately to highly suitable for foraging by this species. Therefore, it is possible Lawrence's goldfinch would occur onsite. However, this bird is excluded from analysis, because loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
least Bell's vireo	*Vireo bellii pusillus*	FE;CE;--	(Nesting) Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 feet; nests placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis*, or mesquite.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely least Bell's vireo would occur at the project site.	No
Lewis' woodpecker	*Melanerpes lewis*	FSC;--;--	Dry open woods, orchards, farmlands, foothills.	Likely	Annual grassland provides high suitability for this species to forage. Therefore, it is likely Lewis' woodpecker would occur at the project location.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
					However, this bird is excluded from analysis, because loss of 2.6 acres of annual grassland (from implementation of the proposed project) is not expected to significantly impact the species population.	
loggerhead shrike	*Lanius ludovicianus*	FSC;CSC;--	(Nesting) Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes; prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	Possible	Habitat at the project location provides moderate to high suitability for this species to find cover and forage. Therefore, it is possible loggerhead shrike would occur onsite. However, this bird is excluded from analysis, because loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
long-billed curlew	*Numenius americanus*	FSC;CSC;--	(Nesting) Breeds in upland shortgrass prairies and wet meadows in northeastern California; habitats on gravelly soils and gently rolling terrain are favored over others.	Possible	Habitat at the project location provides moderate to high suitability for this species to find cover and forage during the winter. Therefore, it is possible long-billed curlew would occur onsite. However, this bird is excluded from analysis, because loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
mountain plover	*Charadrius montanus*	FSC;CSC;--	(Wintering) Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms; short vegetation, bare ground and flat topography; prefer grazed areas and areas with burrowing rodents.	Possible	Sparse annual grassland provides moderate to high suitability for this species to find cover and forage during the winter. Therefore, it is possible mountain plover would occur onsite. However, this bird is excluded from analysis, because loss of 2.6 acres of annual grassland (from implementation of the proposed project) is not expected to significantly impact the species population.	No
northern goshawk	*Accipiter gentilis*	FSC;CSC;--	(Nesting) Within and in vicinity of coniferous forest; uses old	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover,	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			nests, and maintains alternate sites; usually nests on north slopes, near water; red fir, lodgepole pine, Jeffrey pine, and aspens are typical nest trees.		or forage. Therefore, it is unlikely northern goshawk would occur at the project site.	
Nuttall's woodpecker	*Picoides nuttallii*	–;–;SLC	Shrublands, streamsides, and oak woodlands.	Possible	Urban habitat provides moderate suitability for this species to find cover and forage. Therefore, it is possible Nuttall's woodpecker would occur onsite. However, this bird is excluded from analysis, because loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
oak (plain) titmouse	*Baeolophus (Parus) inornatus*	–;–;SLC	Broadleafed woodlands; sparse pinyon-juniper and oak woodlands.	Likely	Urban habitat provides high suitability for this species to reproduce, find cover, and forage. Therefore, it is likely oak titmouse would occur onsite. However, this bird is excluded from analysis, because loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
rufous hummingbird	*Selasphorus rufus*	FSC;–;–	(Nesting) Breeds in transition life zone of northwest coastal area from Oregon border to southern Sonoma County; nests in berry tangles, shrubs, and conifers; favors habitats rich in nectar-producing flowers.	Possible	Urban habitat in Kern County provides moderate to high suitability for this species to find cover and forage during migration. Therefore, it is possible rufous hummingbird would occur onsite. However, this bird is excluded from analysis, because loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
San Joaquin LeConte's thrasher	*Toxostoma lecontei macmillanorum*	FSC;CSC;–	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats; commonly nests	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely San Joaquin LeConte's thrasher would occur at the project site.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.			
southwestern willow flycatcher	*Empidonax traillii extimus*	FE;CE;X	(Nesting) Riparian woodlands in southern California; state listing includes all subspecies.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely southwestern willow flycatcher would occur at the project site.	No
Swainson's hawk	*Buteo Swainsoni*	--;CT;--	(Nesting) Breeds in stands with few trees in juniper-sage flats, riparian areas and in oak savannah; requires adjacent suitable foraging areas such as grasslands, alfalfa, or grain fields supporting rodent populations.	Possible	Habitat at the project site provides moderate to high suitability for this species to reproduce, find cover, and forage during the summer. Therefore, it is possible Swainson's hawk would occur onsite. However, this bird is excluded from analysis, because loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
tricolored blackbird	*Agelaius tricolor*	FSC;CSC;--	(Nesting colony) Highly colonial species, most numerous in Central Valley and vicinity; largely endemic to California; requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	Possible	Annual grassland provides high suitability for this species to forage. However, since no wetlands, an essential element for this species, are present within the project area, it is merely possible tricolored blackbird occurs onsite. Furthermore, this bird is excluded from analysis because loss of 2.6 acres of annual grassland (from implementation of the proposed project) is not expected to significantly impact the species population.	No
Vaux's swift	*Chaetura vauxi*	FSC;CSC;--	(Nesting) Redwood, Douglas fir, and other coniferous forests; nests in large hollow trees and snags; often nests in flocks; forages over most terrains and habitats but shows a preference	Likely	Urban habitat in Kern County provides high suitability for this species to forage during migration. Therefore, it is likely Vaux's swift would occur onsite. However, this bird is excluded from analysis, because loss of habitat (from implementation of the proposed project) is	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			for foraging over rivers and lakes.		not expected to significantly impact the species population.	
western burrowing owl	*Athene cunicularia hypugaea*	FSC;CSC;--	(Burrow sites) Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation; subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Likely	Habitat at the project location provides high suitability for this species to reproduce, find cover, and forage. Therefore, it is likely western burrowing owl would occur onsite.	**Yes**
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FC;CE;--	(Nesting) Riparian forest nester, along the broad, lower flood-bottoms of larger river systems; nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely western yellow-billed cuckoo would occur at the project site.	No
white-faced ibis	*Plegadis chihi*	FSC;CSC;--	(Rookery Site) Shallow fresh-water marsh; dense tule thickets for nesting interspersed with areas of shallow water for foraging.	Unlikely	Annual grassland provides low suitability for this species to forage. Therefore, it is unlikely white-faced ibis would occur at the project location.	No
white-headed woodpecker	*Picoides albolarvatus*	FSC;--;--	Ponderosa pine belts of the mountains; also in subalpine belts of firs.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely white-headed woodpecker would occur at the project site.	No
white-tailed (=black-shouldered) kite	*Elanus leucurus*	FSC;--;--	(Nesting) Rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland; open grasslands, meadows, or marshes for foraging close to	Likely	Urban habitat provides high suitability for this species to reproduce, find cover, and forage. Therefore, it is likely white-tailed kite would occur onsite. However, this bird is excluded from analysis, because loss of habitat (from implementation of the proposed project) is not	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			isolated, dense-topped trees for nesting and perching.		expected to significantly impact the species population.	
willow flycatcher	*Empidonax traillii*	--;CE;--	(Nesting) Inhabits extensive thickets of low, dense willows on the edge of wet meadows, ponds, or backwaters; requires dense willow thickets for nesting/roosting; low, exposed branches are used for singing posts/hunting perches.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely willow flycatcher would occur at the project site.	No
Mammals						
American badger	*Taxidea taxus*	--;CSC;--	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils; need sufficient food, friable soils and open, uncultivated ground; preys on burrowing rodents; digs burrows.	Likely	Annual grassland provides high suitability for this species to reproduce, find cover, and forage. Therefore, it is likely American badger would occur onsite. However, this mammal is excluded from analysis, because loss of 2.6 acres of annual grassland (from implementation of the proposed project) is not expected to significantly impact the species population.	No
Buena Vista Lake shrew	*Sorex ornatus relictus*	FE;CSC;--	Marshlands and riparian areas in the Tulare basin; prefers moist soil; uses stumps, logs and litter for cover.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely Buena Vista Lake shrew would occur at the project site.	No
fisher	*Martes pennanti pacifica*	FC;CSC;--	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure; use cavities, snags, logs and rocky areas for cover and denning; need large areas of mature, dense forest.	Unlikely	Habitat at the project location is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely fisher would occur at the project site.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
fringed myotis bat	*Myotis thysanodes*	FSC;--;--	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer; uses caves, mines, buildings, or crevices for maternity colonies and roosts.	Unlikely	Habitat at the project site provides low suitability for this species to forage. Therefore, it is unlikely fringed myotis bat would occur at the project location.	No
giant kangaroo rat	*Dipodomys ingens*	FE;CE;--	Annual grasslands on the western side of the San Joaquin Valley, marginal habitat in alkali scrub; need level terrain and sandy loam soils for burrowing.	Possible	Annual grassland at the project location provides moderate to high suitability for this species to reproduce, find cover, and forage. Therefore, it is possible giant kangaroo rat would occur onsite. However, this mammal is excluded from analysis, because distributional records for this species (as shown in the Recovery Plan for Upland Species of the San Joaquin Valley) do not include the project area or immediate surrounding areas (USFWS 1998).	No
greater western mastiff-bat	*Eumops perotis californicus*	FSC;CSC;--	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Possible	Habitat at the project location provides moderate to high suitability for this species to forage. Therefore, it is possible greater western mastiff-bat would occur onsite. However, this bat is excluded from analysis, because loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
long-eared myotis bat	*Myotis evotis*	FSC;--;--	Found in all brush, woodland, and forest habitats from sea level to about 9,000 feet; prefers coniferous woodlands and forests; nursery colonies in buildings, crevices, spaces under bark, and snags; caves used	Unlikely	Habitat at the project site is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely long-eared myotis bat would occur at the project location.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			primarily as night roosts.			
long-legged myotis bat	*Myotis volans*	FSC;--;--	Most common in woodland and forest habitats above 4,000 feet; trees are important day roosts, caves and mines are night roosts; nursery colonies usually under bark or in hollow trees, but occasionally in crevices or buildings.	Unlikely	Habitat at the project site provides low suitability for this species to forage. Therefore, it is unlikely long-legged myotis bat would occur at the project location.	No
Mohave ground squirrel	*Spermophilus mohavensis*	--;CT;--	Open desert scrub, alkali scrub and Joshua tree woodland; also feeds in annual grasslands; restricted to Mohave Desert; prefers sandy to gravelly soils, avoids rocky areas; uses burrows at base of shrubs for cover; nests are in burrows.	Unlikely	Annual grassland provides low suitability for this species to find cover and forage. Therefore, it is unlikely Mohave ground squirrel would occur at the project location.	No
Pacific (=Townsend's) western big-eared bat	*Corynorhinus (=Plecotus) townsendii townsendii*	FSC;CSC;--	Humid coastal regions of Northern and Central California; roost in limestone caves, lava tubes, mines, buildings, etc.; will only roost in the open, hanging from walls and ceilings; roosting sites limiting; extremely sensitive to disturbance.	Unlikely	Habitat at the project site provides low suitability for this species to reproduce, find cover, and forage. Therefore, it is unlikely Pacific western big-eared bat would occur at the project location.	No
San Joaquin (=Nelson's) antelope squirrel	*Ammospermophilus nelsoni*	--;CT;--	Western San Joaquin Valley from 200-1,200 foot elevation on dry, sparsely vegetated loam soils; dig burrows or use kangaroo rat burrows; need widely scattered shrubs, forbs and grasses in broken terrain with gullies and	Possible	Annual grassland provides moderate suitability for this species to reproduce and find cover as well as high suitability for foraging. Therefore, it is possible San Joaquin antelope squirrel would occur onsite. However, this mammal is excluded from analysis, because distributional records for this species (as shown in the Recovery Plan for	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			washes.		Upland Species of the San Joaquin Valley) do not include the project area or immediate surrounding areas (USFWS 1998).	
San Joaquin kit fox	*Vulpes macrotis mutica*	FE;CT;--	Annual grasslands or grassy open stages with scattered shrubby vegetation; need loose-textured sandy soils for burrowing, and suitable prey base.	Likely	Annual grassland at the project location provides high suitability for this species to reproduce, find cover, and forage. Therefore, it is likely San Joaquin kit fox would occur onsite.	**Yes**
San Joaquin pocket mouse	*Perognathus inornatus inornatus*	FSC;--;--	Typically found in grasslands and blue oak savannas; need friable soils.	Likely	Annual grassland at the project location provides high suitability for this species to reproduce, find cover, and forage. Therefore, it is likely San Joaquin pocket mouse would occur onsite. However, this mammal is excluded from analysis, because loss of 2.6 acres of annual grassland (from implementation of the proposed project) is not expected to significantly impact the species population.	No
short-nosed kangaroo rat	*Dipodomys nitratoides brevinasus*	FSC;CSC;--	Western side of San Joaquin Valley in grassland and desert shrub associations, especially *Atriplex*; occurs in highly alkaline soils around Soda Lake; needs friable soils; favors flat to gently sloping terrain.	Possible	Open annual grassland provides moderate suitability for this species to reproduce and find cover as well as high suitability for foraging. Therefore, it is possible short-nosed kangaroo rat would occur onsite. However, this mammal is excluded from analysis, because distributional records for this species (as shown in the Recovery Plan for Upland Species of the San Joaquin Valley) do not include the project area or immediate surrounding areas (USFWS 1998).	No
Sierra Nevada (=California) bighorn sheep	*Ovis canadensis californiana*	FE;CE;--	Historically found along the east side and crest of the Sierra Nevada, and on the Great Western Divide; available water and steep, open terrain free of	Unlikely	Habitat at the project site is not typically suitable for this species to reproduce, find cover, or forage. Therefore, it is unlikely Sierra Nevada bighorn sheep would occur at the project location.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			competition from other grazing ungulates.			
Sierra Nevada red fox	*Vulpes vulpes necator*	--;CT;--	Found from the Cascades down to the Sierra Nevada; found in a variety of habitats from wet meadows to forested areas; use dense vegetation and rocky areas for cover and den sites; prefer forests interspersed with meadows or alpine fell-fields.	Unlikely	Annual grassland provides low suitability for this species to forage. Therefore, it is unlikely Sierra Nevada red fox would occur at the project location.	No
small-footed myotis bat	*Myotis ciliolabrum*	FSC;--;--	Rock outcrops, open grasslands, canyons, woodlands; roosts in cracks, crevices in cliffs, beneath tree bark, in mines or caves, and the occasional human dwelling.	Possible	Urban habitat provides high suitability for this species to reproduce and find cover as well as moderate suitability for foraging. Therefore, it is possible small-footed myotis bat would occur onsite. However, this mammal is excluded from analysis, because no indications of bat species (i.e., guano or auditory signs) were observed during the site reconnaissance and loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
southern grasshopper mouse	*Onychomys torridus ramona*	FSC;CSC;--	Desert areas, especially scrub habitats with friable soils for digging; prefers low to moderate shrub cover; feeds almost exclusively on arthropods, especially scorpions and orthopteran insects.	Possible	Annual grassland provides moderate suitability for this species to reproduce, find cover, and forage. Therefore, it is possible southern grasshopper mouse would occur onsite. However, this mammal is excluded from analysis, because loss of 2.6 acres of annual grassland (from implementation of the proposed project) is not expected to significantly impact the species population.	No
spotted bat	*Euderma maculatum*	FSC;CSC;--	Occupies a wide variety of habitats from arid deserts and	Unlikely	Habitat at the project site provides low suitability for this species to find cover and forage.	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
			grasslands through mixed conifer forests; feeds over water and along washes; needs rock crevices in cliffs or caves for roosting.		Therefore, it is unlikely spotted bat would occur at the project location.	
Tehachapi white-eared pocket mouse	*Perognathus alticola inexpectatus*	FSC;CSC;--	Arid annual grassland and desert shrub communities but also taken in fallow grain field and in Russian thistle; burrows for cover and nesting; aestivates and hibernates during extreme weather; forages on open ground and under shrubs.	Unlikely	According to the DFG, this species is known from scattered localities between 3,500 and 6,000 foot elevation (DFG 1986). The project site is located in the valley at approximately 300 foot elevation. Therefore, it is unlikely Tehachapi white-eared pocket mouse would occur at the project site.	No
Tipton kangaroo rat	*Dipodomys nitratoides nitratoides*	FE;CE;--	Saltbrush scrub and sink scrub communities in the Tulare Lake basin of the southern San Joaquin Valley; needs soft friable soils which escape seasonal flooding; digs burrows in elevated soil mounds at bases of shrubs.	Possible	Open annual grassland provides moderate suitability for this species to reproduce and find cover as well as high suitability for foraging, so occurence onsite is possible. However, vegetation at the project site was determined (during the site visit) to be too dense and tall for this species to be present. Therefore, Tipton kangaroo rat is excluded from further analysis.	No
Tulare grasshopper mouse	*Onychomys torridus tularensis*	FSC;CSC;--	Hot, arid valleys and scrub deserts in the southern San Joaquin Valley; diet almost exclusively composed or arthropods, therefore needs abundant supply of insects.	Possible	Annual grassland provides moderate suitability for this species to reproduce, find cover, and forage. Therefore, it is possible Tulare grasshopper mouse would occur onsite. However, this mammal is excluded from analysis, because (according to the Recovery Plan for Upland Species of the San Joaquin Valley) the only recent record of this mouse occurring on the valley floor is from 1994, so it is unlikely current distribution for this species includes the project area (USFWS 1998).	No

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Rationale	Included in Analysis
Yuma myotis bat	*Myotis yumanensis*	FSC;--;--	Optimal habitats are open forests and woodlands with sources of water over which to feed; distribution is closely tied to bodies of water; maternity colonies in caves, mines, buildings, or crevices.	Possible	Habitat at the project location provides moderate suitability for this species to reproduce, find cover, and forage. Therefore, it is possible Yuma myotis bat would occur onsite. However, this mammal is excluded from analysis, because no indications of bat species (i.e., guano or auditory signs) were observed during the site reconnaissance and loss of habitat (from implementation of the proposed project) is not expected to significantly impact the species population.	No
Critical Habitat						
coastal and valley freshwater marsh	NA	--;--;--	Coastal and valley freshwater marsh.	Unlikely	Habitat at the project site consists of ruderal annual grassland and urban.	No
valley saltbush scrub	NA	--;--;--	Valley saltbush scrub.	Unlikely	Habitat at the project site consists of ruderal annual grassland and urban.	No
valley sink scrub	NA	--;--;--	Valley sink scrub.	Unlikely	Habitat at the project site consists of ruderal annual grassland and urban.	No
vernal pools (plant specific)	NA	--;--;--	Vernal pools.	Unlikely	Habitat at the project site consists of ruderal annual grassland and urban.	No

Notes:

1B	CNPS listed rare, threatened, or endangered plants in California or elsewhere
3	CNPS listed plants which need more information
4	CNPS listed plants with limited distribution
CE	California endangered
CNPS	California Native Plant Society
CR	California rare
CSC	California species of concern
CT	California threatened
DFG	California Department of Fish and Game
FD	Federal delisted; species will be monitored for five years
FE	Federal endangered
FSC	Federal species of concern
FT	Federal threatened
PX	Proposed critical habitat
NA	Not applicable
SLC	Species of local concern
USFWS	United States Fish and Wildlife Service
X	Critical habitat designated for this species

Table 3.4-3
Listed and Proposed Species Potentially Occurring in the Project Area Potentially Needing Study

Common Name	Scientific Name	Status	General Habitat Description	Species' Presence Onsite	Potential for Occurrence
Birds					
raptors (birds of prey, such as falcons, hawks, owls) and other migratory and resident birds	NA	MBTA;§3503.5 DFG Code;--	Various habitats.	Likely	Trees within and adjacent to the project location provide potential nest sites for raptors that could also forage within the area. Migratory birds forage and nest in a variety of habitats, including annual grassland and urban regions. Therefore, it is likely nesting avian species occur at the project site during appropriate times of year (i.e., specific species breeding season).
western burrowing owl	*Athene cunicularia hypugaea*	FSC;CSC;--	(Burrow sites) Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation; subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Likely	The City of Delano recognizes that western burrowing owl potentially occur within or near their general plan area (City of Delano 2000). Habitat at the project site and immediate surrounding areas provides small mammal burrows, the essential element for potential occurrence of this species (DFG 2002). Therefore, it is likely western burrowing owl utilize the project area for reproduction, cover, and/or foraging.
Mammals					
San Joaquin kit fox	*Vulpes macrotis mutica*	FE;CT;--	Annual grasslands or grassy open stages with scattered shrubby vegetation; need loose-textured sandy soils for burrowing, and suitable prey base.	Likely	The City of Delano recognizes that San Joaquin kit fox potentially occur within or near their general plan area (City of Delano 2000). The CNDDB shows the project area as located within the distributional range of San Joaquin kit fox. USFWS distributional records also show kit fox occurrence within the 12 miles, the recorded home range for this species, of the project site (USFWS 1998). Therefore, it is likely San Joaquin kit fox utilize the project location.

Notes:

CNDDB	California Natural Diversity Database	FE	Federal endangered
CSC	California species of concern	FSC	Federal species of concern
CT	California threatened	MBTA	Migratory Bird Treaty Act
DFG	California Department of Fish and Game	USFWS	US Fish and Wildlife Service

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LISTED AND SPECIAL STATUS WILDLIFE

Based on USFWS and CNDDB information, several special status animals have a potential for occurrence within the project vicinity (see **Table 3.4-2, Listed and Proposed Species Potentially Occurring in the Project Area**). However, according to the CWHR, habitat at the project location (see descriptions above) provides low suitability for many of these species; therefore, the species are not expected to be present on the project site. After further review of species' life history and habitat suitability data, as well as consulting the *City of Delano General Plan*, two species under the consideration of State and Federal regulatory agencies (see **Table 3.4-3, Listed and Proposed Species Potentially Occurring in the Project Area Potentially Needing Study**) have a potential for occurrence at the project site and possibly require further study. In addition, nesting raptor and migratory bird species that are protected under *Section 3503.5 of the California Fish and Game Code* and Migratory Bird Treaty Act (MBTA) have a potential for occurrence at the project site and possibly require further study. These species are discussed below.

Raptors and Migratory Birds

Trees within and adjacent to the project site provide potential nest sites for common raptors that could also forage within the area. Migratory birds forage and nest in a variety of habitats, including annual grassland and urban regions. Active bird nests potentially found within the project area are protected under the Migratory Bird Treaty Act and Section 3503.5 of the DFG Code, which outlaws their disturbance or destruction. See **Table 3.4-1**, **Species Commonly Occurring in Kern County** for a list of avian species that commonly occur within the region of the project location.

Western Burrowing Owl

Western burrowing owl (*Athene cunicularia hypugaea*) is a federal and California species of special concern. Found commonly in fallow agricultural fields and low-growing grassland, this gregarious owl also frequents habitats such as airport fields, highway shoulders, golf courses, and vacant lots. As a subterranean nester, the burrowing owl is dependant on ground squirrels or other small mammals for ideal nest sites and tends to reuse the same burrows year after year. Man-made structures such as cement culverts, debris piles, or openings beneath pavement can also provide suitable nest areas. Burrowing owls can often be seen in the daytime perching near their burrow (DFG 2002).

Nesting season begins as early as February 1 and continues through August 31, peaking between April 15 and July 15. An average nest consists of 6 to 11 white eggs that need to be incubated for 21 to 28 days (Stokes 1996). The young are initially dependent on their parents for food and warmth and generally leave the nest about 28 days from hatching. Disturbance of nest sites (harassment within 160 feet of the burrow) and habitat loss contribute to the decline of this species (The California Burrowing Owl Consortium 1993).

The City of Delano recognizes that western burrowing owl potentially occur within or near their General Plan area (City of Delano 2000). Habitat at the project location and immediate surrounding areas provides small mammal burrows, the essential element for potential occurrence of this species (DFG 2002). Therefore, it is likely western burrowing owl utilize the project area for reproduction, cover, and/or foraging.

San Joaquin Kit Fox

The San Joaquin kit fox (*Vulpes macrotis mutica*) is a federal endangered and California threatened listed species. This fox is believed to have ranged historically from southern Kern County to Contra Costa and Stanislaus Counties in the San Joaquin Valley (DFG 2002). They inhabited several San Joaquin Valley vegetation communities, including annual grassland and a variety of scrub habitats. Today, San Joaquin kit fox populations are extremely fragmented. In their northern range, kit fox are found primarily in foothill grassland, oak savannah, and adjacent agricultural areas. In the southern range, kit fox inhabit grassland and scrubland communities, including those that have been modified by development, such as with oil exploration, wind turbines, agricultural and grazing (USFWS 2005b).San Joaquin kit fox are primarily carnivorous, feeding on small mammals (black-tailed jackrabbit [*Lepus californicus*], desert cottontail [*Sylvilagus audubonii*], kangaroo rat [*Dipodomys sp.*], and ground squirrel [*Spermophilus sp.*]), insects, reptiles, ground-nesting birds, and bird eggs (DFG 2002). Dens are used for temperature regulation, shelter from adverse weather, protection from predators, and refuge for pups. Kit fox dig dens in open, level areas with loose-textured soils. However, kit fox also use dens constructed by other animals as well as man-made structures such as culverts, abandoned pipelines, or banks in sumps or roadbeds. Kit fox often change dens; so many different dens may be used throughout the year (USFWS 2005b).

Adult breeding pairs of kit fox stay together throughout the year. Females begin to clean and enlarge pupping dens between September and October and mating occurs between December and March. Litters of typically two to six pups are born in February or March (DFG 2002). Pups emerge from the den about one month later. Disturbance or loss of dens, fragmentation of habitat, hunting, trapping, off-road vehicles, and use of rodenticides and other poisons contribute to San Joaquin kit fox decline (USFWS 2005b).

The City of Delano recognizes that San Joaquin kit fox potentially occur within or near their General Plan area (City of Delano 2005). The CNDDB shows the project area as located within the distributional range of San Joaquin kit fox. USFWS distributional records also show kit fox occurrence within 12 miles, the recorded home range for this species, of the project site (USFWS 1998). Furthermore, several potential den sites and possible kit fox tracks were observed onsite during the reconnaissance survey. The caretaker of the property also reported commonly seeing canine-like mammals on and adjacent to the property. Therefore, it is likely San Joaquin kit fox could utilize the project location and further study is warranted.

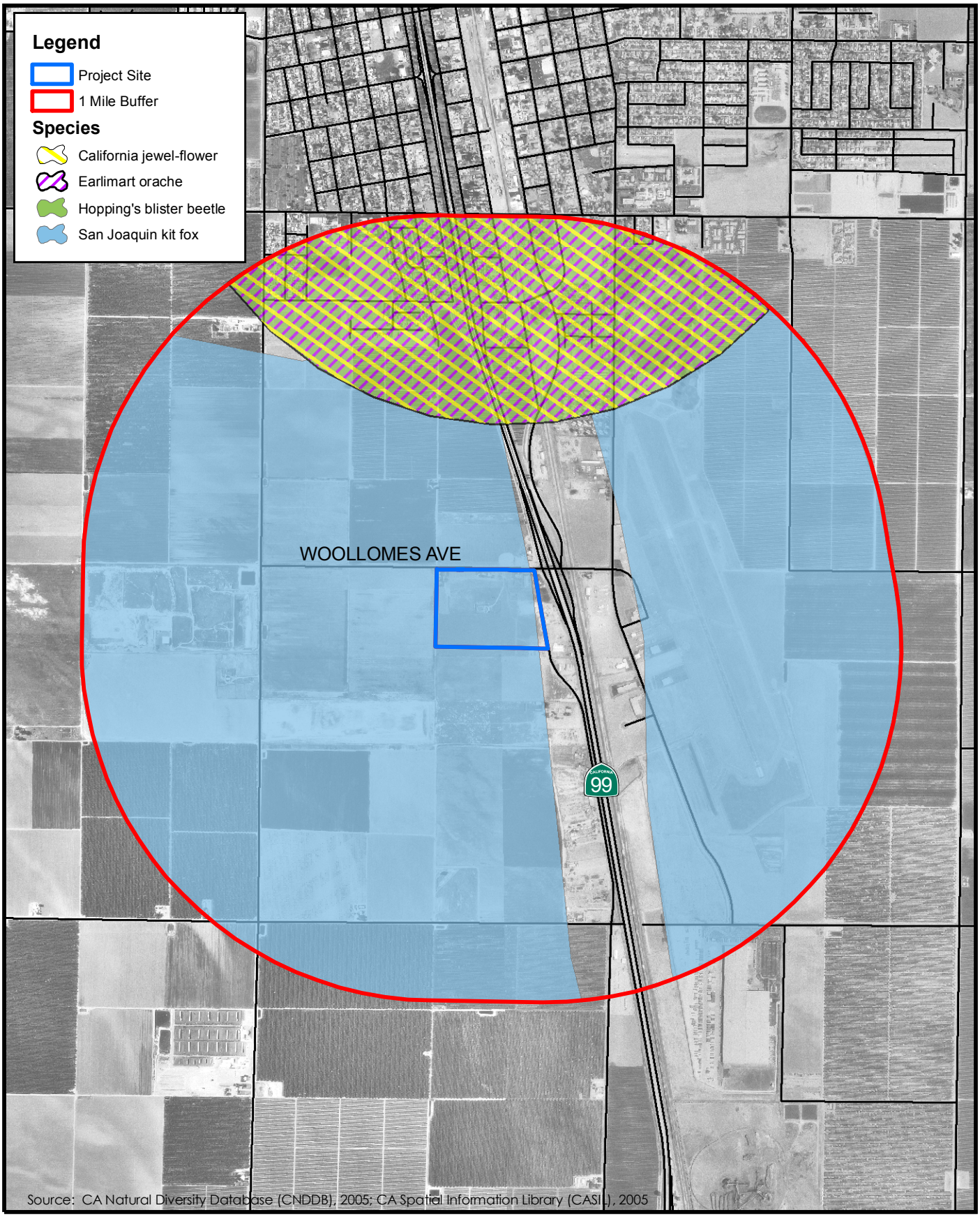

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FIGURE 3.4-2
RECORDED OCCURRENCES OF SPECIAL-STATUS SPECIES WITHIN 1 MILE OF PROJECT SITE

PMC

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SENSITIVE HABITATS

Sensitive habitats include: a) areas of special concern to resource agencies, b) areas protected under the California Environmental Quality Act (CEQA), c) areas designated as sensitive natural communities by DFG, and d) areas protected under local regulations and policies. Sensitive habitats were not observed at the project site during the site reconnaissance or during subsequent review of aerial photography. The site consists of (predominantly ruderal) annual grassland and urban habitats, which are common throughout California. As such, they are not considered sensitive by resource agencies or local ordinances.

JURISDICTIONAL WATERS

No potentially jurisdictional waters or any waterways were observed at the project location during the site reconnaissance. Therefore, the proposed project is outside the jurisdiction of the U.S. Army Corps of Engineers (ACOE), as no fill material shall be introduced into intrastate waters, including lakes, rivers, streams, wetlands, and natural ponds, with implementation of the project.

WILDLIFE CORRIDORS

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Corridors are present in a variety of habitats and link undisturbed areas that would otherwise be fragmented. Maintaining the continuity of established wildlife corridors is important to: a) sustain species with specific foraging requirements, b) preserve a species' distribution potential, and c) retain diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource. No known wildlife migration routes or corridors occur within the project site. Furthermore, since the general region of the project area is open and undeveloped for wildlife to disperse through, no significant impact to wildlife corridors is expected from project implementation.

3.4.2 REGULATORY FRAMEWORK

This section lists specific environmental review and consultation requirements as well as identifies permits and approvals that must be obtained from local, state, and federal agencies before implementation of the proposed project.

FEDERAL

Federal Endangered Species Act

Provisions of the Federal Endangered Species Act (FESA), as amended (16 USC 1531), protect federally listed threatened and endangered species and their habitats from unlawful

take. "Take" under FESA includes activities such as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The USFWS regulations define harm to include some types of "significant habitat modification or degradation." The U.S. Supreme Court ruled on June 29, 1995, that "harm" may include habitat modification "...where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." Section 7 of the FESA requires that federal agencies, in consultation with USFWS or the National Oceanic and Atmospheric Administration (NOAA) Fisheries, use their authorities to further the purpose of FESA and to ensure that their actions are not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat. Section 10(a)(1)(B) allows non-federal entities to obtain permits for incidental taking of threatened or endangered species through consultation with USFWS or NOAA Fisheries.

Migratory Bird Treaty Act

Migratory birds are protected under the MBTA of 1918 (16 USC 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The vast majority of birds found in the study area are protected under the MBTA. Thus, project construction has the potential to directly take nests, eggs, young or individuals of these protected species. Further, construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to the abandonment of nests, a violation of the MBTA.

Bald Eagle Protection Act

The bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) are federally protected under the Bald Eagle Protection Act (16 U.S.C. 668-668c). It is illegal to take, possess, sell, purchase, barter, offer to sell or purchase or barter, transport, export or import at any time or in any manner a bald or golden eagle, alive or dead; or any part, nest or egg of these eagles unless authorized by the Secretary of the Interior. Violations are subject to fines and/or imprisonment for up to one year. Active nest sites are also protected from disturbance during the breeding season.

STATE

California Endangered Species Act

Under the California Endangered Species Act (CESA), DFG has the responsibility for maintaining a list of endangered and threatened species (California Fish and Game Code 2070). DFG also maintains a list of "candidate species" which are species that DFG

formally notices as being under review for addition to the list of endangered or threatened species. Pursuant to the requirements of CESA, proponents of any project within the State must determine whether state-listed endangered or threatened species may be present in the project study area and determine whether the proposed project will have a potentially significant impact on such species. Furthermore, DFG encourages informal consultation on any proposed project that may impact a candidate species.

California Regional Water Quality Control Board

Clean Water Act, Section 401 Water Quality Certification

Section 401 of the Clean Water Act requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. The appropriate Regional Water Quality Control Board (in California) regulates Section 401 requirements.

California Department of Fish and Game

Streambed Alteration Agreement (Sections 1600-1607 of the California Fish and Game Code)

State, local public agencies, and private entities are subject to Section 1602 of the California Fish and Game Code, which governs construction activities that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the DFG. Under Section 1602, a discretionary Stream Alteration Agreement must be issued by the DFG to project proponents prior to the initiation of construction activities within a streambed. As a general rule, this requirement applies to any work undertaken within the 100-year floodplain of a stream or river containing fish or wildlife resources.

Native Plant Protection Act

The Native Plant Protection Act (*California Fish and Game Code Section 1900-1913*) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered (as defined by DFG). An exception to this prohibition in the Act allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify DFG and give that state agency at least 10 days to salvage the plants before they are destroyed.

Birds of Prey

Under *Section 3503.5 of the California Fish and Game Code* it is unlawful to take, possess, or destroy any birds in the orders of Falconiformes or Strigiformes (birds of prey) or to take,

possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.

"Fully Protected" Species

California statutes also accord "fully protected" status to a number of specifically identified birds, mammals, reptiles, and amphibians. Section 3505 of the California Fish and Game Code makes it unlawful to "take" "any aigrette or egret, osprey, bird of paradise, goura, numidi, or any part of such a bird." Section 3511 protects from "take" the following "fully protected birds": (a) American peregrine falcon (*Falco peregrinus anatum*); (b) brown pelican (*Pelecanus occidentalis*); (c) California black rail (*Laterallus jamaicensis coturniculus*); (d) California clapper rail (*Rallus longirostris obsoletus*); (e) California condor (*Gymnogyps californianus*); (f) California least tern (*Sterna albifrons browni*); (g) golden eagle; (h) greater sandhill crane (*Grus canadensis tabida*); (i) light-footed clapper rail (*Rallus longirostris levipes*); (j) southern bald eagle (*Haliaeetus leucocephalus leucocephalus*); (k) trumpeter swan (*Cygnus buccinator*); (l) white-tailed kite (*Elanus leucurus*); and (m) Yuma clapper rail (*Rallus longirostris yumanensis*).

California Fish and Game Code Section 4700 identifies the following "fully protected mammals" that cannot be "taken": (a) Morro Bay kangaroo rat (*Dipodomys heermanni morroensis*); (b) bighorn sheep (*Ovis canadensis*), except Nelson bighorn sheep (subspecies *Ovis canadensis nelsoni*); (c) Guadalupe fur seal (*Arctocephalus townsendi*); (d) ring-tailed cat (genus *Bassariscus*); (e) Pacific right whale (*Eubalaena sieboldi*); (f) salt-marsh harvest mouse (*Reithrodontomys raviventris*); (g) southern sea otter (*Enhydra lutris nereis*); and (h) wolverine (*Gulo gulo*).

Fish and Game Code Section 5050 protects from "take" the following "fully protected reptiles and amphibians": (a) blunt-nosed leopard lizard (*Crotaphytus wislizenii silus*); (b) San Francisco garter snake (*Thamnophis sirtalis tetrataenia*); (c) Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*); (d) limestone salamander (*Hydromantes brunus*); and (e) black toad (*Bufo boreas exsul*).

Fish and Game Code Section 5515 also identifies certain "fully protected fish" that cannot lawfully be "taken" even with an incidental take permit. The following species are protected in this fashion: (a) Colorado River squawfish (*Ptychocheilus lucius*); (b) thicktail chub (*Gila crassicauda*); (c) Mohave chub (*Gila mohavensis*); (d) Lost River sucker (*Catostomus luxatus*); (e) Modoc sucker (*Catostomus microps*); (f) shortnose sucker (*Chasmistes brevirostris*); (g) humpback sucker (*Xyrauchen texanus*); (h) Owens River pupfish (*Cyprinoden radiosus*); (i) unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*); and (j) rough sculpin (*Cottus asperrimus*).

LOCAL

City of Delano General Plan

The following policies from the Open Space and Conservation Element of the *Delano General Plan* (City of Delano 2005) are relevant regarding natural resources impacts:

Policy 6 Promote biological diversity and the use of plant species compatible with the bio-region.

Policy 7 If street trees are removed, they shall be replaced with tree species specified on the City's Street Tree Master Plan.

Policy 10 Properties which may have listed plant and animal species will be required to have biological investigation if such species may be present. Federal and State protocols and requirements shall be used for such surveys and needed mitigation.

3.4.3 IMPACTS AND MITIGATION MEASURES

A discussion of potential impacts and an evaluation of their significance to biological resources related to the proposed project is included in the following sections.

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on CEQA Guidelines (Appendix G) and City of Delano policies. For the purposes of this EIR, impacts are considered significant if the following could result from implementation of the proposed project:

1) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, endangered, threatened, or other special-status in local or regional plans, policies and regulations, or by the DFG or USFWS;

2) 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 DFG or USFWS;

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

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

5) Conflict with any local polices or ordinances protecting biological resources, such as a tree preservation policy;

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

7) Substantially reduce the habitat of a fish, wildlife, or plant species or cause a species to drop below self-sustaining levels; or

8) Directly affect species protected under provisions of the Migratory Bird Treaty Act.

An evaluation of the significance of potential impact on biological resources must consider both direct effects to the resource as well as indirect effect in a local or regional context. Potentially significant impacts would generally result in the loss of a biological resource or obviously conflict with local, state, or federal agency conservation plans, goals, policies, or regulations. Actions that would potentially result in a significant impact locally may not be considered significant under CEQA if the action would not substantially affect the resource on a population-wide or region-wide basis.

METHODOLOGY

Available information pertaining to biological resources within the project action area, which refers to the area directly or indirectly affected by the proposed action, was reviewed during this analysis, including (but not limited to):

- Aerial photograph of the project location from the California Spatial Information Library;
- *City of Delano General Plan* (City of Delano 2005);
- *Inventory of Rare and Endangered Plants for the Deepwell Ranch, Delano East, Delano West, Famoso, McFarland, North of Oildale, Pond, Richgrove, and Wasco topographic quadrangles* (CNPS 2005);
- California Natural Diversity Database records for the Deepwell Ranch, Delano East, Delano West, Famoso, McFarland, North of Oildale, Pond, Richgrove, and Wasco topographic quadrangles (DFG 2003);

- California Wildlife Habitat Relationships database (DFG 2002);
- *The Jepson Manual: Higher Plants of California* (Hickman 1993);
- *National Audubon Society, Field Guide to California* (Alden et.al. 1998);
- Reports from M.H. Wolfe and Associates (2005a & 2005b);
- Online Database for the California San Joaquin Valley Area, Including Kern County, Winter (Sierra Club 2005);
- *List of Federal Endangered and Threatened Species that occur in or may be affected by projects in Kern County* (USFWS 2005);
- USGS 7.5 minute McFarland topographic quadrangle.

SITE RECONNAISSANCE

PMC's biologists surveyed the project site on March 3, 2005. Field investigations included a general inspection of the project site to adequately characterize existing habitat with emphasis on areas with the potential to support special status species or critical habitats. A pedestrian survey was also conducted for general plant and wildlife species. Plants species noted during the site inspection included (but are not limited to): coast fiddleneck (*Amsinckia intermedia*), common mallow (*Malva neglecta*), hairy vetch (*Vicia villosa*), hare barley (*Hordeum leporinum*), ripgut brome, Russian thistle (*Salsola iberica*), and various unidentified ornamentals. Wildlife species observed included, Brewer's blackbird (*Euphagus cyanocephalus*), great blue heron (*Ardea herodias*), house sparrow (*Passer domesticus*), red-tailed hawk (*Buteo jamaicensis*), red-winged blackbird (*Agelaius phoeniceus*), song sparrow (*Melospiza melodia*), and various insects. Several burrows ranging in size from about one-inch to fifteen-inch diameter were also observed throughout the site. These burrows are presumably occupied by mammals, such as black-tailed jackrabbit, California vole (*Microtus californicus*) or San Joaquin kit fox (*Vulpes macrotis)*. Mammal tracks of varying sizes (predominately canid) were seen within the grassland areas and at the entrance of burrows within the project area.

In November 2006, PMC's biologists also surveyed the area for the proposed improvements at the State Route 99/Woollomes Avenue interchange. This area included ruderal grasses and urban roadway consistent with conditions previously noted (and discussed) in other areas of the proposed project site (PMC 2006a).

ADDITIONAL STUDIES

In response to findings during the site reconnaissance and at the request of the City of Delano, PMC's biologists performed further studies to establish whether San Joaquin kit fox

or western burrowing owl actively reproduce onsite. Between August 29th and September 1st of 2006, potential San Joaquin kit fox dens (burrows with an entrance of four inches in diameter or greater) were dusted with flour and monitored in the morning and evening for canine tracks. Pedestrian transect surveys were also performed to search for other signs of occupancy, such as further tracks, scat, or prey remains. Smaller burrows (with an entrance less than four inches in diameter) were viewed at dawn and dusk through binoculars for presence of burrowing owl. Throughout the survey period, no canine tracks or prey remains were observed. However, one possible sign of old kit fox scat was seen in the northwest corner of the project site. No burrowing owls were observed. Therefore, it is not likely that San Joaquin kit fox or western burrowing owl currently inhabit the project site. However, it is possible that these species, especially transient kit fox, range throughout the area and may seek potential dens onsite (PMC 2006b).

Additionally, between August and September of 2005 M.H. Wolfe and Associates performed night spotlighting, diurnal surveys, as well as scent and camera station surveys of areas adjacent to the project site. Their studies also concluded that it is unlikely San Joaquin kit fox inhabit adjacent sites, but it is highly possible this species range throughout the area seeking potential burrows (M.H. Wolfe and Associates 2005a & 2005b).

PROJECT IMPACTS AND MITIGATION MEASURES

Project components were considered in evaluating and assessing the potential impacts to biological resources. Development of the proposed project site has the potential to directly or indirectly affect biological resources as well as contribute to cumulative impacts. Potential impacts to biological resources can be temporary, long-term, or permanent, depending on the effect of project activities on an individual resource.

Potential Disturbance of Western Burrowing Owl Habitat

Impact 3.4-1 Development of the proposed project would result in temporary disturbance and permanent alteration of site conditions that could support western burrowing owl. This is considered a **potentially significant** impact.

Due to the degraded conditions of the project site, there is a low potential of suitability for reproduction, cover, and foraging habitat for western burrowing owl, a federal and California species of special concern within the project area. While no burrowing owls were observed during the initial site inspection in March 2005 and subsequent surveys conducted in August and September of 2006, several burrows were noted that could provide temporary refuse for the species were noted within the project area. Therefore, implementation of the proposed project could affect burrowing owl, both directly (removal of habitat) and indirectly (increased human activity). Special status wildlife species are considered to be a sensitive resource by federal and state resource agencies, so alteration of

the project site is considered a **potentially significant** impact. Implementation of the following mitigation measure would reduce this impact to a **less than significant** level:

Mitigation Measure

MM 3.4-1 The project applicant shall retain a qualified biologist approved by the City of Delano to complete mitigation established by the DFG to "avoid and minimize impacts to burrowing owls at a project site and preserve habitat that will support viable owl populations" (DFG 1995). The biologist shall complete pre-construction surveys of suitable burrowing owl habitat at the project site and within surrounding areas (up to 150 feet outside the project area) no more than 30 days prior to ground disturbance activities. If no burrowing owls are detected during the pre-construction surveys, no action is necessary. However, if burrowing owls are detected within the project area, the following shall apply (as outlined in DFG guidance):

- During the non-breeding season (September 1st through January 31st), no disturbance should occur within approximately 160-foot radius of an occupied burrow. During the nesting season (February 1st through August 31st), occupied burrows should not be disturbed within a 250-foot radius unless a qualified biologist approved by the DFG verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival;

- The project applicant shall acquire and permanently protect, either through conservation easement or through an approved mitigation bank, a minimum of 6.5 acres (amount established by the DFG) of foraging habitat (calculated on an approximate 300-foot foraging radius around the burrow) per pair or unpaired resident bird to offset the loss of foraging and burrow habitat on the project site. The protected lands should be adjacent to occupied burrowing owl habitat and at a location acceptable to the DFG. Protection of additional habitat acreage per pair or unpaired resident bird may be applicable based on DFG guidance;

- When destruction of occupied burrows is unavoidable, existing unsuitable burrows should be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows per DFG design specifications) at a ratio of 2:1 on the protected lands site;

- If owls must be moved away from the disturbance area, passive relocation techniques (as outlined by the DFG [i.e., use of one-way doors]) should be used rather than trapping. At least one or more weeks

will be necessary to accomplish this and allow the owls to acclimate to alternate burrows;

- The project applicant shall provide funding for long-term management and monitoring of the protected lands. The monitoring plan should include success criteria, remedial measures, and an annual report to the DFG.

Implementation of the above mitigation measure would reduce impacts to Western burrowing owl to a **less than significant** level.

Potential Disturbance of San Joaquin Kit Fox Habitat

Impact 3.4-2 Development of the proposed project would result in temporary disturbance and permanent alteration of site conditions that could support San Joaquin kit fox. This is considered a **potentially significant** impact.

San Joaquin kit fox, a special status wildlife species, may occur in the project area. Due to the degraded conditions at the project site, there is a low potential of suitability for reproduction, cover and foraging of this species. However, the project site may provide temporary refuse for the species. While no San Joaquin kit fox were observed during the site inspection performed by PMC's biologist in March 2005 or subsequent surveys performed in August and September of 2006, several habitat elements associated with this species were noted within the project area, such as burrows, indications of small mammals and friable soils. In addition, the City of Delano recognizes that San Joaquin kit fox potentially occur within or near their General Plan area (City of Delano 2005) and the CNDDB shows the project area as located within the distributional range of San Joaquin kit fox. Therefore, implementation and construction of the proposed project could affect San Joaquin kit fox if they are using the project site for temporary refuse, both directly (e.g., removal of habitat) and indirectly (e.g., increased human activity). Special status wildlife species are considered to be a sensitive resource by federal and state resource agencies, so alteration of the project site to urban uses is considered a **potentially significant** impact unless subsequent surveys are conducted prior to construction activities at the project site. Implementation of the following mitigation measure would reduce this impact to a **less than significant** level.

Mitigation Measure

MM 3.4-2 The project applicant shall retain a qualified biologist approved by the City of Delano to ensure no incidental take of San Joaquin kit fox occurs during construction or through any project-related activity occurring onsite. Consequently, no more than 30 days prior to ground disturbance the

biologist shall conduct a survey for San Joaquin kit fox within and in the vicinity of the project site to ensure take avoidance. Survey results shall be submitted to the USFWS and DFG for evaluation and comment prior to the onset of construction activities.

The regulatory agencies (USFWS and DFG) may recommend project modifications or additional actions such as, biological monitoring, further avoidance measures, minimization, restoration, preservation, or compensation. Compensation for loss of habitat could include the acquisition and preservation of equivalent acreage of suitable San Joaquin kit fox habitat (minimum acreage loss-replacement ratio 1:1) at an approved mitigation bank. The project applicant shall implement actions recommended by the USFWS and DFG.

Furthermore, minimum construction requirements as outlined in the USFWS Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (June 1999) shall be implemented by the biologist in coordination with the project applicant as follows:

- Restrict project-related vehicle traffic to established roads or other designated areas onsite. Vehicles should observe a 20-mile per hour speed limit in all project areas (except on paved pre-existing roads with an established speed limit). Off-road traffic outside of the designated project areas should be prohibited;

- Night-time construction should be prohibited;

- All excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, each shall be thoroughly inspected for trapped animals. If at any time a trapped or injured San Joaquin kit fox is discovered, the procedures described under subsection “n” must be followed;

- All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored onsite for one or more nights shall be thoroughly inspected for San Joaquin kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a San Joaquin kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved

once to remove it from the path of construction activity, until the fox has escaped;

- All food-related trash items, such as wrappers, cans, bottles, and food scraps, shall be disposed of in closed containers and removed at least once a week from the project site;
- No firearms shall be allowed on the project site;
- No pets (e.g., dogs, cats, etc.) shall be permitted onsite;
- Use of rodenticides and herbicides in project areas shall be prohibited. If rodent control must be conducted, zinc phosphide should be used because of a proven (and recognized by the USFWS) lower risk to kit fox;
- The biologist shall be the appointed contact source for any employee or contractor who might inadvertently kill or injure a San Joaquin kit fox or who finds a dead, injured, or entrapped animal. The biologist will be identified during the employee education program (see below). Furthermore, the biologist's name and telephone number shall be provided to the USFWS;
- An employee education program shall be instituted for all site personnel. The program will consist of a brief presentation by the biologist that includes a description of the San Joaquin kit fox and its habitat needs, a report of the occurrence of San Joaquin kit fox in the project area, an explanation of the status of the species and its protection under FESA and CESA, as well as a list of measures being taken to reduce impacts to the species during project implementation. A fact sheet conveying this information shall be prepared by the biologist and distributed to any personnel who may enter the project site;
- Upon completion of the proposed project, all areas subject to temporary ground disturbance, including storage and staging areas, temporary roads, pipeline corridors, etc. shall be re-contoured if necessary and revegetated to promote restoration of the area to pre-project conditions to the extent possible. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the USFWS, DFG, and revegetation experts;
- Should any San Joaquin kit fox be found trapped onsite, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS should be contacted for advice;

- Any onsite personnel who inadvertently kills or injures a San Joaquin kit fox (or witnesses such an occurrence) shall immediately report the incident to the biologist. Subsequently, the biologist shall contact the DFG immediately in the case of a dead, injured, or entrapped fox; and

- The biologist shall notify the USFWS and DFG in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project-related activities. Notification shall include the date, time, and location of the incident or of the finding of a dead or injured animal as well as any other pertinent information.

- The regulatory agencies (USFWS and DFG) may recommend additional project modifications, such as biological monitoring, further avoidance measures, minimization, restoration, preservation, or compensation. Compensation for loss of habitat could include the acquisition and preservation of equivalent acreage of suitable San Joaquin kit fox habitat (minimum acreage loss-replacement ratio 1:1) at an approved mitigation bank. The project applicant shall implement actions recommended by the USFWS and DFG.

Implementation of the above mitigation measure would reduce impacts to San Joaquin kit fox to a **less than significant** level.

Potential Disturbance of Raptors and Migratory Birds

Impact 3.4-3 Implementation of the proposed project would result in temporary and direct disturbance to nesting raptors and migratory birds (excluding burrowing owl). This is considered a **potentially significant** impact.

Habitat at the site provides suitable nesting opportunities for many avian species, including some raptors and migratory birds. Raptors and raptor nests are considered to be a protected resource by federal and state agencies under the MBTA and California Code of Regulations. Project implementation could result in impacts to nesting birds. Possible nest abandonment as well as mortality to eggs and chicks is considered a potentially significant impact. Construction could also result in noise, dust, increased human activity, and other indirect impacts to nesting raptors or migratory bird species in the project vicinity. Implementation of the following mitigation measure would reduce this impact to a **less than significant** level.

Mitigation Measure

MM 3.4-3 If proposed construction activities are planned to occur during the nesting seasons for local avian species (typically March 1st through August 31st), the

project applicant shall retain a qualified biologist approved by the City of Delano to conduct a focused survey for active nests of raptors and migratory birds within and in the vicinity of (no less than 100 feet outside project boundaries, where possible) the construction area no more than 30 days prior to ground disturbance. If an active nest is located during pre-construction surveys, USFWS and/or DFG (as appropriate) shall be notified regarding the status of the nest. Furthermore, construction activities shall be restricted as necessary to avoid disturbance of the nest until it is abandoned and the consulting regulatory agency deems disturbance potential to be minimal. Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment at a minimum radius of 100-feet around the nest) or alteration of the construction schedule.

If construction occurs during the non-breeding season (generally September 1st through February 28th), a policy of avoidance and passive relocation (allowing an animal to move out of harms way without any purposeful interference by humans) for any wildlife found onsite shall be implemented for the duration of the project. The appropriate regulatory agency (USFWS or DFG) shall be contacted regarding any species of wildlife refusing to passively relocate from the project area.

Implementation of the above mitigation measure would reduce impacts to nesting raptors and migratory birds to a **less than significant** level.

Potential Disturbance of Significant Trees

According to the *City of Delano General Plan*, any street trees removed during project construction will require replacement with tree species listed on the City's *Street Tree Master Plan*. Implementation of the proposed landscape plan, which is subject to review and approval by the City, will ensure street trees are replaced with suitable new trees.

Furthermore, the project does not conflict with any local ordinances or any adopted California or City of Delano habitat conservation plan. Therefore, completion of Mitigation Measures **MM 3.4-1** through **MM 3.4-3** would reduce impacts to biological resources from implementation of the proposed project to **less than significant** levels.

Impacts to Federally Protected Wetlands

No potentially jurisdictional waters or any waterways were observed at the project site during the site reconnaissance conducted by PMC. Therefore, the proposed project is outside the jurisdiction of the U.S. Army Corps of Engineers (ACOE), as no fill material shall be introduced into intrastate waters, including lakes, rivers, streams, wetlands, and natural ponds, with implementation of the proposed project.

Conflicts with Adopted Habitat Conservation Plan.

The project site is not located within area associated with an adopted Habitat Conservation Plan. Therefore there will be **no impact** associated with conflicts with an adopted Habitat Conservation Plan.

CUMULATE IMPACTS AND MITIGATION MEASURES

Cumulative Impacts to Special Status Species, Critical Habitats and Wildlife Movement

Impact 3.4-4 The proposed project, in addition to anticipated cumulative development in the project vicinity, may disturb special status species, critical habitats and wildlife movement throughout the region. These impacts would be considered **potentially significant** cumulative impacts.

As presented in the impact discussions above, implementation of the proposed project would result in a loss of habitat and contribute to biological resource impacts, including disturbance of special status species. Anticipated development and urban expansion of the area is expected to further contribute to these impacts and is considered a potentially significant cumulative impact to biological resources.

Implementation of mitigation measures presented within this chapter, **MM 3.4-1** through **MM 3.4-3**, would reduce the overall contribution to cumulative biological resource impacts resulting from completion of the project by ensuring that the project applicant retain a qualified biologist to complete pre-construction surveys of suitable burrowing owl and San Joaquin kit fox habitat no more than 30-days prior to construction activities at the project site and to conduct focused surveys for active nests of raptors and migratory birds if proposed construction activities are to occur during the nesting season for local avian species. Appropriate performance measures are incorporated within these mitigation measures to ensure that the proposed project would not contribute to the potential loss and/or restriction of biological resources in the region. Therefore, the proposed project would have a **less than significant** cumulative impact to special status species, critical habitats, and wildlife movement.

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Section 3.5
Cultural Resources

This section of the RDEIR discusses the existing historical and cultural resources present at the project site and evaluates the potential impacts to those resources that could result from implementation of the proposed project. This analysis is based upon an archaeological and historical investigation completed in March 2005 by John Nadolski, M.A., Cultural Resources Specialist with PMC. A follow up archaeological and historical investigation of the proposed interim improvements at the State Route 99/Woollomes Avenue interchange (discussed in **Section 3.12, Traffic and Circulation**) was conducted in December of 2006. These reports are included in Appendix D of this RDEIR.

3.5.1 ENVIRONMENTAL SETTING

REGIONAL SETTING

The Central Valley of California stretches 430 miles northwest by southeast, with a maximum width of 50 miles, and is divided into the Sacramento Valley in the north and the San Joaquin Valley in the south. The proposed project is located within San Joaquin Valley in the City of Delano. The San Joaquin Valley provided an exceptionally rich resource base that was exploited by prehistoric and historic Native American populations. Euroamericans also used the area for agricultural and petroleum production.

The San Joaquin Valley primarily consists of alluvial deposits that were accumulated while shallow brackish and freshwater lakes occupied the valley. As these lakes dried up the surface of the valley was covered with very fertile unconsolidated sediments. The Kings, Kaweah, Tule, and Kern Rivers, and other smaller rivers and creeks provide water to the San Joaquin Valley from the southern Sierra Nevada. Prior to Euroamerican occupation of the area these rivers produced a complex pattern of streams, sloughs, lakes (e.g., Tulare Lake and Buena Vista Lake), and marshlands throughout the area. The valley wetlands provided habitat for waterfowl, turtles and fresh-water mussels. As the Euroamericans began to occupy the area much of the water entering the valley was diverted to irrigation canals and the valley floor was converted to agricultural use. Agricultural use of the valley has continued and intensified since initial Euroamerican settlement in the area.

In general, the prehistory of the San Joaquin Valley may be divided into three periods. The first period is characterized by big game hunting and dates to approximately 8,000 years ago. The second period dates from approximately 5,000 years ago to A.D. 1200, and is characterized by a shift in subsistence strategy from hunting to the collection of plant resources. The third period dates from approximately A.D. 1200-1700, and represents habitation of the area by Yokuts.

Ethnography

Prior to the arrival of Euroamericans in the region, groups of Native Americans speaking more than 100 different languages and occupying a variety of ecological settings inhabited California. California was divided into four subculture areas, Northwestern, Northeastern, Southern, and Central. The Central area encompasses the proposed project area and includes the Yokuts.

Yokuts inhabited the San Joaquin Valley and are members of the Penutian language family. Yokuts are generally divided into three groups, Northern Yokuts, Foothill Yokuts, and Southern Yokuts. Southern Yokuts occupied the proposed project area and developed a distinctive subsistence strategy that exploited the wetlands that previously covered large areas of the southern San Joaquin Valley.

Yokuts subsistence patterns included hunting, fishing, and collecting plant resources. Yokuts hunted a variety of game (e.g. tule elk, antelope, rabbits and squirrels) using an un-backed bow and arrows with simple, hardened wood points. Waterfowl were netted or trapped, and fish were netted or speared. In addition, lakes, sloughs, and marshes were exploited for other resources such as fresh-water mussels and turtles. Yokuts used a wide variety of plant resources, particularly roots and seeds, for food and tule for boats and huts.

Yokuts culture prospered until the arrival of Euroamericans in their territory. Contact with Euroamericans affected and dramatically altered the Yokuts culture. As the Euroamerican population increased in California, Yokuts and other Native American groups and their traditional cultures declined across California.

Euroamerican Contact

Spanish expeditions into the Tulare Lake Basin in the vicinity of Visalia occurred between 1772 and 1824. The initial expeditions were exploratory in nature, followed by punitive campaigns to either remove or return Native Americans to coastal missions. Coastal missions dominated the social, political, and economic lives of both Spanish and Native Americans across much of California during the Spanish Period (ca. 1769-1821). Many Native American groups, however, were reluctant to adapt to the feudal style mission "system" and convert to Catholicism. This factor in combination with the onset of many European diseases virtually ended the traditional life ways of many Native American groups in California.

The Mexican Period (ca. 1821-1848) in California is an outgrowth of the Mexican Revolution, and its accompanying social and political views affected the mission system. In 1833 the missions were secularized and their lands divided among the *Californios* as *ranchos* in the form of land grants. The *ranchos* facilitated the growth of a semi-aristocratic group that controlled large *ranchos* or land grants. Local Native American populations,

who were essentially used as forced labor, worked on these large tracts of land. This was a period of growing antagonism of Native Americans toward Euroamericans and a decline in Native American populations due to both disease and abuse.

The end of the Mexican-American War and the signing of the Treaty of Guadalupe Hidalgo in 1848 marked the beginning of the American Period (ca. 1848-present) in California history. The onset of this period did not initiate a change in the economic condition of the Native American populations. The *rancho* system also generally remained intact until 1862-1864 when a drought forced many landowners to sell off or subdivide their holdings. At this time open ranges began to be fenced and the economy began to shift from cattle ranching to dairy farming and agriculture based on new crops such as wheat. Regardless of a change of economic focus, the plight of Native American populations remained, at best, relatively unchanged. Subsequent conflicts regarding reservation lands and local and federal recognition continue to the present.

Euroamericans initially used the San Joaquin Valley for cattle and sheep ranching. The climate, however, was more suited for agriculture, and by 1870 much of the land in the valley was primarily used for wheat farming. Farming continued to expand in the area and currently the San Joaquin Valley contains five of the top ten agricultural counties in the United States, with Fresno, Kern, and Tulare counties typically ranking in the top three. In addition to agriculture, the petroleum industry has a history in the southern San Joaquin Valley. Kern County is one of the nation's most productive oil-producing counties, and extraction of oil in the area dates to 1899.

City of Delano

The area, now known as the City of Delano, began to grow as Mother Lode miners began to relocate to the area to dig tunnels in search of "black gold." In addition, inhabitants in the Delano area increased dramatically after gold was discovered in Kern County in 1853. In 1870, the Southern Pacific Railroad created a railhead at Delano and on July 14, 1873, Delano was founded as a railroad town. The name Delano was officially applied by the Southern Pacific Railroad in honor of Columbus Delano, the Secretary of the Interior for the United States at that time. The City of Delano incorporated on April 13, 1915.

PROJECT SETTING

Archaeological and historical investigations for the proposed project were completed in March 2005 by PMC in order to comply with regulations and criteria presented in CEQA and its Guidelines at Section 15064.5. Cultural resources investigations included a records search at the Southern San Joaquin Valley Archaeological Information Center at California State University, Bakersfield; archival research at the Kern County Assessor's Office; a sacred lands search conducted by the Native American Heritage Commission (NAHC); consultation with the Native American community; pedestrian surface survey of the Area of

Potential Affects (APE); and completion of a report that documents the results of archaeological and historical investigations and presents management recommendations, as appropriate, for cultural resources (e.g., prehistoric sites, historic sites, and/or historic buildings) within the project boundaries.

Cultural Resources

The archaeological records search conducted by PMC did not identify any cultural resources (e.g., prehistoric sites, historic sites, isolated artifacts, and/or historic buildings) within the project area. Similarly, the sacred lands search did not identify any sensitive Native American cultural resources either within or near the proposed project area. According to the *City of Delano General Plan*, there is only one recorded archaeological site in the vicinity, the abandoned domestic refuse site in the southwestern part of town. The record search did identify a previous survey that encompassed a small section of the project site and three surveys within ¼-mile of the project site.

Historic Resources

Since nearly most of the project site had not been surveyed, PMC conducted a pedestrian surface survey across the project site using 20 to 30 meter transects. Surface visibility across the project site was limited by vegetation, but areas of native surface were visible and overall surface visibility was adequate to identify prehistoric and/or historic sites and features in the project site. The pedestrian surface survey did not identify any prehistoric or historic sites, but did identify buildings and structures within the project site that were built between 1932 and 1961. Demolition permits were obtained from the City of Delano and all structures at the project site have been demolished.

Prior to demolition, the project site contained the following structures: the Pioneer Motel located at 1001 Garzoli Avenue; the Garzoli Pallet Company located at 1051 Garzoli Avenue; five residences and associated structures (e.g., garages and storage sheds) located at 450, 456, 542, 548, and 554 Woollomes Avenue; a garage/machine shop; and an area owned by the Garzoli Pallet Company that is covered with trash and other debris.

The Pioneer Motel and the Garzoli Pallet Company (**Figure 3.5-1**) do not meet the age criteria to be considered for inclusion in the California Register of Historic Resources (CRHR). However, the five residences and the garage/machine shop were built between 1932 and 1961 and may be eligible for inclusion in the CRHR. Detailed descriptions of each of the buildings are included below.

<u>450 Woollomes Avenue (APN: 521-050-01)</u>

The residence located at 450 Woollomes Avenue is a single story, vernacular building constructed in 1940 that is reminiscent of the Ranch Style architecture (**Figure 3.5-2**). The

rectangular building is constructed with a side-gabled roof covered with redwood shakes and corrugated metal, stucco on the exterior, with an addition on the south side. The building has been relatively well maintained, however it appears to have undergone episodes of remodeling and/or reconstruction (e.g., construction of an addition on the south side of the building). Associated with this building is a wooden storage shed.

456 Woollomes Avenue (APN: 521-050-01)

The residence located at 456 Woollomes Avenue is a single story, vernacular building constructed in 1951 that is also reminiscent of the Ranch Style architecture (**Figure 3.5-2**). The building construction consists of a side-gabled roof covered with redwood shakes, stucco on the exterior with stonework finish along the lower half of the north (front) side of the building, and aluminum sliding windows. The building has been relatively well maintained, however it appears to have undergone remodeling and/or reconstruction (e.g., construction of an addition on the south side of the building and carport) that have changed the shape of the building from a rectangle to a "T" shape. The addition on the south end of the building has a brick chimney and a roof covered with redwood shakes and corrugated metal. The carport on the east side of the building has a flat corrugated metal roof. Others buildings associated with this building are a garage constructed of cement blocks and two small wooden sheds.

542 Woollomes Avenue (APN: 521-050-01)

The residence located at 542 Woollomes Avenue is a single story Minimal Traditional style building constructed in 1949 (**Figure 3.5-3**). The building is L-shaped with a shed roof covered entry, a cross-gabled composition shingle roof, stucco on the exterior, and double hung wood framed windows. The building has been relatively well maintained, however, it has been remodeled (e.g., construction of an addition on the west side of the building). Also associated with this structure is a front gabled single car garage with a composition shingle roof and stucco on the exterior.

548 Woollomes Avenue (APN: 521-050-01)

The residence located at 548 Woollomes Avenue is a single story Ranch Style building constructed in 1958 (**Figure 3.5-4**). The building has a side-gabled composition shingle and corrugated metal roof, a half-width shed roofed front porch, horizontal wood siding and board and batten covering its south side, double-hung windows with wood frames, and an attached carport with a flat roof and an addition on its south end. The building has been relatively well maintained, however remodeling and/or reconstruction (e.g., wood siding and construction of an addition at the rear of the carport) has occurred. Another building associated with this structure is a side gabled wooden storage shed with wood siding.

554 Woollomes Avenue (APN: 521-050-01)

The residence located at 554 Woollomes Avenue is a single story, vernacular building constructed in 1961 that is reminiscent of the Craftsman Style architecture (**Figure 3.5-5**). The building consists of a front-gabled corrugated metal roof, a front-gabled canopy covering the front entrance, horizontal wood siding that consists of boards of varying sizes, double hung windows with wood frames, aluminum frame sliding windows, and fixed windows in wood frames, and a bump-out at its southwest corner. The building has not been well maintained, and appears to have undergone remodeling and/or reconstruction (e.g., installation of aluminum frame windows and construction of the bump-out). Additional buildings associated with this structure include a carport framed with wood lattice and a small wooden storage shed.

Parcel 5 (APN 521-050-05)

This is a single story brick and corrugated metal structure located on Parcel 5 (**Figure 3.5-6**). This structure appears to be the remnants of a garage and machine shop that was built in 1943. A wrecking yard formerly occupied the area west of the garage/machine shop and an underground "concrete vault" is located east of the garage/machine shop (The Twining Laboratories, Inc. 2004). The structure is abandoned and is in very poor condition.

3.5.2 REGULATORY SETTING

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

CEQA presents guidelines at §15064.5 and §21083.2 for the identification of historical resources and determining their historical significance. CEQA §15064.5(a)(3) presents the following eligibility criteria for inclusion of historical resources in the CRHR:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(2) Is associated with lives of persons important in our past;

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

CEQA also presents criteria for the identification of unique archaeological resources at §21083.2(g):

Pioneer Motel

Garzoli Pallet Company

T:\Delano Plaza \Graphic Development \Illustrator Files\Figure 3.5-1.ai, September 2005

Structures have been demolished since PMC's site reconnaissance in January 2005.

FIGURE 3.5-1

PIONEER MOTEL & GARZOLI PALLET COMPANY

PMC

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450 Woollomes Avenue

456 Woollomes Avenue

T:\Delano Plaza \ Graphic Development \ Illustrator Files \ Figure 3.5-2.ai, September 2005

Structures have been demolished since PMC's site reconnaissance in January 2005.

FIGURE 3.5-2

450 & 456 WOOLLOMES AVENUE

PMC

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T:\Delano Plaza \ Graphic Development \ Illustrator Files \ Figure 3.5-3.ai, September 2005

Structures have been demolished since PMC's site reconnaissance in January 2005.

FIGURE 3.5-3

542 WOOLLOMES AVENUE

PMC

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Structures have been demolished since PMC's site reconnaissance in January 2005.

FIGURE 3.5-4

548 WOOLLOMES AVENUE

PMC

T:\Delano Plaza \Graphic Development \Illustrator Files\Figure 3.5-4.ai, September 2005

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T:\Delano Plaza \Graphic Development \Illustrator Files\Figure 3.5-5.ai, September 2005

Structures have been demolished since PMC's site reconnaissance in January 2005.

FIGURE 3.5-5

554 WOOLLOMES AVENUE

PMC

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T:\Delano Plaza\Graphic Development\Illustrator Files\Figure 3.5-7.ai, September 2005

Structures have been demolished since PMC's site reconnaissance in January 2005.

FIGURE 3.5-6

PARCEL 5 WITH ABANDONED BUILDING

PMC

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(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) It has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event. In addition to the eligibility criteria at CEQA §15064.5(a)(3), the California Code of Regulations (CCR), Title 14, Division 3, Chapter 11.5 § 4852 (c) also states that integrity of historical resources should be considered when addressing their eligibility for inclusion in the CRHR. This section of the CCR describes integrity as the

> *…authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Historical resources eligible for listing in the California Register must…retain enough of their historic character to be recognizable as historical resources and to convey the reasons for their significance.*
>
> *Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association.*

Therefore, eligible historic resources must not only meet one of the above listed criteria, but also they must retain enough of their historic character or appearance to convey the reasons for their importance, or retain the potential to yield significant scientific or historical information or specific data. Most often, historical resources eligible for the California Register will be 50 years old or older. However, the regulations stipulate "a resource less than fifty (50) years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance."

CALIFORNIA OFFICE OF HISTORIC PRESERVATION, REGIONAL INFORMATION CENTERS

The California Office of Historic Preservation established the Regional Information Centers as local repositories for all archaeological reports prepared under cultural resource management regulations. State guidelines and current professional standards require a background search at the appropriate Regional Information Center. Following the completion of a project, a copy of the report must be deposited at the appropriate Regional Information Center to assist with future background searches.

3.5.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on CEQA Guidelines and other performance standards recognized by the City of Delano. For the purposes of this EIR, a significant impact will occur if the project will result in one or more of the following:

1) Cause a substantial adverse change in the significance of an historical or archaeological resource as defined in CEQA Guidelines Section 15064.5;
2) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; and/or
3) Disturb any human remains, including those interred outside of formal cemeteries.

METHODOLOGY

Archaeological and historical investigations conducted for the proposed project included records searches, consultation with the Native American community and a pedestrian surface survey of the Area of Potential Affects (APE).

PROJECT IMPACTS AND MITIGATION MEASURES

Archaeological and Cultural Resources

Impact 3.5-1 The project site does not contain any recorded or anticipated resources of archaeological, cultural, or pre-historic significance. However, site preparation and grading could disrupt undiscovered archaeological and cultural resources of importance under CEQA and/or eligible for listing on the California Register. This is a **potentially significant** impact.

Field inspections and review of maps and records on file at the Southern San Joaquin Valley Archaeological Information Center at California State University, Bakersfield were performed. These investigations did not identify any historical resources or unique archaeological resources within or in the vicinity of the project site. The project site has historically been used for residential, commercial and service facilities and is heavily disturbed due to development and grading, which could have destroyed or covered resources if they were present at one time. Based on a site visit by PMC in December 2006, the location of the proposed interchange improvements at the State Route 99/Woollomes Avenue interchange (discussed in **Section 3.12, Traffic and Circulation**) is also heavily disturbed. Regardless of these findings, it is always possible to inadvertently uncover cultural resources or human remains during ground disturbing project activity (e.g.

grading activities during construction). Any destruction or disturbance of undiscovered archaeological resources, whether planned or inadvertent, is considered a **potentially significant impact.** Implementation of the following mitigation measures would reduce this impact to a **less than significant** level.

Mitigation Measures

MM 3.5-1a Should any previously undisturbed cultural, historic, or archaeological resources be uncovered in the course of site preparation, clearing or grading activities, all operations within 25 feet of the discovery shall be halted until such time as a qualified professional archaeologist can be consulted to evaluate the find and recommend appropriate action. If the find is determined to be significant, appropriate mitigation measures shall be formulated and implemented by the City of Delano.

MM 3.5-1b In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of Kern County has determined whether the remains are subject to the coroner's authority. This is in accordance with Section 7050.5 of the California Health and Safety Code. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of identification. Pursuant to Section 5097.98 of the Public Resource Code, the Native American Heritage Commission will identify a "Native American Most Likely Descendent" to inspect the site and provide recommendations for the proper treatment of the remains and any associated grave goods.

Implementation of the above mitigation measures will reduce the potential impact to undiscovered archaeological, historic, or cultural resources to a **less than significant** level by halting operations in the event of a discovery and assessing the find in accordance with Section 7050.5 of the California Health and Safety Code.

Demolition of Potentially Historic Resources

Impact 3.5-2 Implementation of the proposed project demolished five private residences and associated structures (e.g. sheds, carports and garages) that were constructed over 45 years ago. Based on the archaeological and historic investigation completed for the proposed project, none of the buildings/structures within the project site appear to meet the eligibility criteria for inclusion in the California Register of Historic Resources (CRHR) or for consideration as unique archaeological resources.

Therefore, demolition of these structures would be considered a **less than significant** impact.

The proposed project included demolition of the following structures: the Pioneer Motel located at 1001 Garzoli Avenue; the Garzoli Pallet Company located at 1051 Garzoli Avenue; five residences and associated structures (e.g., garages and storage sheds) located at 450, 456, 542, 548, and 554 Woollomes Avenue; a garage/machine shop located on Parcel 5; and the Garzoli Pallet Company. Demolition permits were obtained from the City of Delano and all structures at the project site have been demolished since the original site reconnaissance was performed in January 2005. The Pioneer Motel and the Garzoli Pallet Company (**Figure 3.5-1**) do not meet the age criteria to be considered for inclusion in the CRHR. The five residences and the garage/machine shop, however, were built between 1932 and 1961 and may be eligible for inclusion in the CRHR. Field and archival research performed by PMC did not identify information to suggest that the residences and/or structures are in any way associated with events that made a broad contribution to the history of California, or any important individual. These structures do not embody any distinctive elements of design or methods of construction that are representative of a particular type or period of construction, and remodeling and/or reconstruction has compromised the integrity of these structures.

The residences and structures on the project site are adequately recorded in the archaeological and historical investigation included in the Technical Appendices, and additional research regarding these structures is not anticipated to yield additional information about the historical significance. Therefore, these structures are not considered historically significant and the demolition of these structures was determined to be a **less than significant** impact. No mitigation is required.

Cumulative Impacts and Mitigation Measures

Impact 3.5-3 Implementation of the proposed project, in combination with cumulative development activity in the region, would increase the potential to disturb or contribute to the loss of known and undiscovered cultural resources. This is considered a **potentially significant** impact.

Implementation of **Mitigation Measures MM 3.5-1a** and **MM 3.5-1b** would ensure the project's contribution to this cumulative impact remains at a **less than significant** level by addressing impacts on a case by case basis, thus avoiding compounding of cumulative development.

REFERENCES/DOCUMENTATION

City of Delano. *General Plan*. Adopted December 5, 2005.

PMC. *Cultural Resources Investigations for the Delano Marketplace Project*. John Nadolski. March 2005.

PMC. *Cultural Resource Investigation for the Interim Improvements at the State Route 99/Woollomes Avenue Interchange*. John Nadolski. December 2006.

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Section 3.6
Geology and Soils

This section of the RDEIR provides a discussion of the geologic, seismic and soil conditions at the proposed project site. The potential impacts of the proposed project related to existing geologic, seismic and soil conditions are evaluated and mitigation measures are proposed where applicable. The following discussion is based primarily on the *Geotechnical Engineering Feasibility Investigation* conducted in May 2005 and *Phase I Environmental Site Assessment* conducted in August 2004, prepared by Twining Laboratories, Inc. for the project applicant and information contained in the *City of Delano General Plan* (City of Delano 2005). The preliminary geotechnical report is included in Appendix E of this RDEIR.

3.6.1 EXISTING SETTING

TOPOGRAPHY, GEOLOGY AND SOILS

Regional Geologic Setting

The City of Delano is situated in the San Joaquin Valley, a structural trough whose main axis trends northwest-southeast and is bordered on the east by the granitic complex of the Sierra Nevada and on the west by the folded and faulted sedimentary, volcanic, and metamorphic rocks of the Coast Range. The relatively flat floor of the San Joaquin Valley overlies thousands of feet of alluvial, lacustrine, and marine deposits that have accumulated in the San Joaquin Valley as the trough has been lowered and the adjacent mountains have been elevated. The low alluvial plains and fans in the San Joaquin Valley floor are relatively flat and featureless, occupying most of the floor's area. The extensive fans along the eastern margin of the San Joaquin Valley contain high proportions of well-sorted gravel and sand, while the interstream areas between the fans are underlain by poorly sorted, fine-grained fluvial sediment deposited by intermittent streams. The average elevation of the City of Delano is 300 to 325 feet above sea level.

Project Site Setting

The 45-acre project site is relatively level with an elevation of approximately 300 feet above mean sea level and slopes gently to the southwest. An irregular shaped soil borrow pit (300 feet by 200 feet) exists in the north-central portion of the project site. It is approximately five lower than the surrounding area. An approximately 5,000 square foot, rectangular flood control basin is located in the northeastern portion of the site. The bottom of this basin is estimated as 12 to 15 feet lower than the surrounding grades.

Soils Characteristics

According to the *Soil Survey for Kern County, Western Part,* the northern portion of the project site is comprised of Wasco sandy loam and the southern portion of the project site is comprised of Garces silt loam. The Wasco sandy loam is a deep, well-drained soil found

on recent alluvial fans and flood plains. It forms in alluvium derived dominantly from granitic rock. Permeability of the Wasco sandy loam soil is moderately rapid, available water holding capacity is moderate, runoff is slow and the hazard of water erosion is slight. Garces silt loam is a deep, well-drained, saline-alkali soil found on basin rims. It forms on alluvium derived dominantly from granitic rock. Permeability of the Garces silt loam soil is very low, available water capacity is low to high, runoff is very slow and the hazard of water erosion is slight.

Soil testing was conducted as part of the *Geotechnical Engineering Feasibility Investigation* by Twining Laboratories, Inc. in May 2005. Twining Laboratories drilled six borings to depths ranging from 20 to 50 feet below site grades (bsg) within four of the parcels at the project site (Parcels 1, 2, 4, and 5). Test borings were logged and the soils were classified in general accordance with the Unified Soil Classification System. In addition to the six boring soil samples, three bulk samples were obtained to test for resistance value, moisture-density relationship, and corrosion.

In general, near surface soils at the project site consist of silty sands to depths ranging between about 3.5 feet and 8 feet bsg. Possible fill soils, consisting of silty sands with intermixed sandy lean clays, were encountered to a depth of about 5.5 feet bsg in the western-central portion of the project site. Very loose soils were noted between depths of 3.5 to 5 feet bsg, which indicates the depth that the soils may have been disturbed. Within the borrow pit area, near surface silty sands were encountered to about 1 foot bsg. Native, near surface sandy silt soils were encountered in the southwestern portion of the project site to a depth of about 4 bsg. The near surface silty sands and sandy silts were underlain by interbeds of poorly graded sands, sandy lean clays, silty sands and sandy silt soils to the maximum depth explored, approximately 50 feet bsg. The sandy silt layer directly below the near surface silty sands was noted to be porous. The native, sandy lean clay layers were encountered at depths of 4 feet bsg or lower.

Laboratory tests were conducted on two near surface silty sand samples to determine the corrosivity of on-site soils. Electrical resistance values of 6,500 and 7,800 ohm-centimeters and pH values of 6.9 and 8.2, were indicated by the respective samples.

Shrink Swell Potential

Shrink swell potential refers to the change in the volume of soil material that results from a change in the moisture content of the soil. Much damage to building foundations, roads, and other structures is caused by the shrinking and swelling of soils as they become wet and dry. Twining Laboratories conducted expansion testing and classified soils in accordance with Uniform Building Code (UBC) Table 18-1-B. In general, a moderate expansion potential of near surface soils was encountered in localized areas of the project site.

Static Settlement

The potential for excessive total and differential settlements of foundations and slabs-on-grade was evaluated for the proposed project. Increases in effective stress to underlying soils which can occur from new foundations and structures, placement of fill, withdrawal of groundwater, etc., can cause vertical deformation of the soils, which can result in damage to overlying structures and improvements. In addition, the allowable bearing pressures for the soils supporting the foundations were evaluated to ensure shear, or punching type failure of the soils would not result due to the imposed foundation loads.

Near surface sandy silts were encountered at the boring conducted in Parcel 4, from the ground surface to 4 feet bsg, and in the boring conducted within Parcel 2, from 1 foot to 8 feet bsg. Limited laboratory testing indicates that these soils are also highly compressible and exhibit high collapse potential. Settlement calculations based on the subsurface data and laboratory testing indicate that static settlement of foundations placed directly on areas consisting of the native silty sand and sandy silt soils would exceed a total settlement of one inch.

GROUNDWATER CONDITIONS

Perched groundwater was encountered at a depth of about 33 feet bsg in the borings conducted within Parcel 2 and Parcel 4, which were both drilled to about 50 feet bsg. Groundwater encountered was considered to be a perched layer considering that a stiff to very stiff confining clay layer was encountered below the groundwater depth, and soil layers below the confining clay layer were moist but not wet. According to maps published by the California Department of Water Resources, the depth to first encountered regional groundwater underlying the project site is estimated to be 55 to 120 feet bsg.

FAULTS AND SEISMICITY

Intensity Criteria

Earthquake magnitude is a measure of the total amount of energy released in an earthquake. With increasing magnitude (i.e. larger earthquakes) ground motions are stronger, last longer, and are felt over larger areas. Earthquake intensity is a measure of the effects of earthquake ground motions on people and buildings. Earthquake intensity, is often more useful than magnitude when discussing the damaging effects of earthquakes. The most common intensity scale is the Modified Mercalli Intensity scale, which ranges from I to XII. **Table 3.6-1** below, describes the effects of earthquakes and compares the Richter Scale (magnitude) to the Modified Mercalli Scale (intensity). In addition to the Mercalli Scale, faults are classified according to criteria provided by the Uniform Building Code, as identified in **Table 3.6-2**.

TABLE 3.6-1
MODIFIED MERCALLI INTENSITY SCALE FOR EARTHQUAKES

Richter Magnitude Scale	Modified Mercalli Scale	Effects of Intensity
0.1-2.9	I	Earthquake shaking not felt.
	II	Shaking felt by those at rest.
3.0-3.9	III	Felt by most people indoors; some can estimate duration of shaking.
4.0-4.9	IV	Felt by most people indoors. Hanging objects rattle, wooden walls, frames creak.
	V	Felt by everyone indoors; many estimate duration of shaking. Standing autos rock. Crockery clashes, dishes and glasses rattle. Doors open, close, and swing.
5.0-5.9	VI	Felt by all; many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
5.0-6.9	VII	People frightened and walls unsteady. Pictures and books thrown, dishes/glass are broken. Weak chimneys break. Plaster, loose bricks and parapets fall.
6.0-6.9	VIII	Difficult to stand, waves on ponds, cohesionless soils slump. Stucco and masonry walls fall. Chimneys, stacks, towers, elevated tanks twist and fall.
7.0-7.9	IX	General fright as people are thrown down. Hard to drive, trees broken, damage to foundations and frames. Reservoirs damaged, underground pipelines broken.
7.0-8.0+	X	General panic, ground cracks, masonry and frame buildings destroyed. Bridges destroyed, dams, dikes and embankments damaged. Railroads bent.
8.0+	XI	Large landslides, water thrown, general destruction of buildings; pipelines destroyed; railroads bent.
8.0+	XII	Total nearby damage, rock masses displaced. Lines of sight/level distorted. Objects thrown into air.

Source: California Geological Survey, 2002

TABLE 3.6-2
UNIFORM BUILDING CODE FAULT CLASSIFICATIONS

Fault Type	Characteristics
A	Faults that have a Richter magnitude potential of 7.0 and a slip rate equal to or greater than 5 mm/year. These types of faults are considered to be active and capable of producing large magnitude events. Most segments of the San Andreas Fault are be classified as a Type A fault.

Fault Type	Characteristics
B	All faults that are not Type A or Type C. Includes most of the active faults in California.
C	Faults that have a Richter magnitude potential of less than 6.5 and a slip rate of less than or equal to 2 mm/year. These faults are considered to be sufficiently inactive and not capable of producing large magnitude events such that potential near-source ground shaking effects can be ignored. Most faults outside of California are Type C.

Source: Uniform Building Code

According to the *City of Delano General Plan*, no faults have been mapped immediately near the City of Delano. The nearest active fault to the project site is the Great Valley fault, approximately 70 miles northwest of the project site.

Surface Ground Rupture

The project site is not located within an Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist. Therefore, the potential for surface ground rupture at the project site is considered low.

Ground Shaking

Ground shaking is the source of the most widespread earthquake damage. The amount of ground shaking at a particular site depends on characteristics of the earthquake source, distance from the fault and amplification effects of local geologic deposits. As a rule, the greater the earthquake magnitude and the closer the fault rupture to the site, the greater the intensity of ground shaking. The 2001 California Building Code (CBC) indicates the project site is located in Seismic Zone 3. A probabilistic seismic hazard analysis was conducted by Twining Laboratories to assess potential seismic ground shaking at the site. Results indicate the site vicinity can expect a peak horizontal ground acceleration of about 0.22g (g is defined as the force of gravity) as a result of the design basis earthquake ground motion. The California Building Code (CBC) specifies design criteria applicable to new construction based on predicted ground shaking.

Liquefaction

Liquefaction is the loss of strength in saturated granular soils produced by seismic shaking and is often accompanied by the surface occurrence of free water produced by sand boils. For this to occur, the soils must be saturated at a relatively shallow depth, of a granular (non-cohesive) nature, and can be relatively loose.

Because the groundwater encountered on the site is a perched groundwater level and the regional groundwater table in the vicinity of the site in recent years is estimated to be approximately 100 feet deep, the potential for liquefaction is considered low.

Seismic Settlement

Seismic settlement can occur in both saturated and unsaturated granular soils, and results from the rearrangement of granular soils during cyclic loading induced by ground shaking, resulting in volume reduction and surface deformation. Liquefaction analyses conducted by Twining Laboratories indicate that a total dry seismic settlement of about ¼-inch was estimated as a result of shaking caused by the design basis earthquake. This settlement may not occur uniformly over the site due to variations in the thicknesses of different soil layers; therefore, a differential seismic settlement of about one quarter-inch across the proposed building pads should be anticipated.

Landslides

Due to the relatively level topography of the project site, the potential for landslides at the project site is considered very low.

Lateral Spreading or Slumping

Lateral spreading is the lateral displacement of flat-lying alluvial material toward an open or a free face, such as a steep bank of a stream channel. It can occur with seismic shaking on slopes of saturated soils. Since the project site is virtually flat, the potential for lateral spreading is low.

3.6.2 REGULATORY SETTING

CALIFORNIA AND UNIFORM BUILDING CODES

The California Building Code (Title 24) and the Uniform Building Code provide standards for testing and building construction as well as safety measures for development within earthquake prone areas.

ALQUIST-PRIOLO EARTHQUAKE FAULT ZONING ACT

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. The project site is not located within an Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist.

SEISMIC HAZARDS MAPPING ACT

The Seismic Hazards Mapping Act (1990) requires the State Geologist to designate Seismic Hazard Zones. These zones assist cities and counties in fulfilling their responsibilities for protecting the public from the effects of non-surface fault rupture earthquake hazards such as strong ground shaking, earthquake-induced landslides, liquefaction, or other ground failures. The California Geological Survey has not issued a Seismic Hazards Map for the Delano area.

3.6.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on CEQA Guidelines and generally accepted standards for environmental documents prepared pursuant to CEQA. For the purposes of this RDEIR, impacts are considered to be significant if any of the following would result from implementation of the proposed project:

1) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving,

    a) 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;

    b) Strong seismic ground shaking;

    c) Seismic-related ground failure including liquefaction; or,

    d) Landslides;

2) Result in a substantial soil erosion or the loss of topsoil;

3) 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;

4) Be located on an expansive soil, as defined in Table 18-1-B of the current Uniform Building Code, creating substantial risks to life or property; and/or,

5) Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater.

METHODOLOGY

The following impact evaluation is based primarily on the findings and recommendations contained in the preliminary geotechnical report by Twining Laboratories, which is included in the Technical Appendices of this RDEIR.

The geotechnical investigation included soil borings at six locations, with boring locations selected to provide adequate spacing for determining the general subsurface soil profile across the proposed project site. In addition, three bulk samples of soil were obtained for chemical analyses. Laboratory testing was conducted on disturbed and undisturbed samples representative of the subsurface material to determine selected physical and engineering properties of soils underlying the site. Additional analysis included examination of aerial photographs, review of the *Phase I Environmental Site Assessment*, prepared by Twining Laboratories on May 24, 2004, and consultation with the project applicant. The findings and recommendations of the geotechnical investigation form the basis of the following discussion of impacts and mitigation.

PROJECT IMPACTS AND MITIGATION MEASURES

Ground Rupture

The project site is not located within an Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist. There are no known or potentially active faults located within or near the vicinity of the project site. Based on the distance of the nearest fault to the project site, the proposed project would not expose people or property to ground rupture and **no impact** is expected.

Seismic Ground Shaking

Impact 3.6-1 Strong ground shaking from nearby active and potentially active faults during a major earthquake event could cause severe damage to structures at the project site. This is considered a **potentially significant** impact.

The primary seismic hazard associated with the proposed project would be the potential for strong ground shaking from an earthquake on the faults in the vicinity of the project site. The 2001 California Building Code (CBC) indicates the project site is located in Seismic Zone 3. A seismic hazard analysis conducted by Twining Laboratories in the preliminary geotechnical analysis, which assessed the potential for seismic ground shaking, indicates the project site can expect a peak horizontal ground acceleration of about 0.22g (g is defined as the force of gravity) as a result of the design basis earthquake ground motion. Implementation of the following mitigation measure would reduce this potentially significant impact to a **less than significant** level.

Mitigation Measure

MM 3.6-1 Subject to review and approval by the City of Delano, all future development at the project site shall be designed in accordance with the requirements of the current edition of the California Building Code for Seismic Zone 3 and the recommendations contained within the *Geotechnical Engineering Feasibility Investigation* prepared by Twining Laboratories in May, 2005, including the following:

- Floor slabs may be supported on properly moisture conditioned engineered fill, which extends to the depth of engineered fill recommended for foundation excavation. Internal slabs-on-grade in areas where near surface, expansive clay soils are placed as fill below the building slabs should be underlain by at least 30 inches of non-expansive, granular engineered fill soils. For constructability purposes, it is recommended all slabs-on-grade be underlain by at least six inches of Class 2 aggregate base.

- Collapsible soils should be over-excavated and compacted as engineered fill from areas of the planned improvements to reduce the collapse potential of these soils.

- Over-excavation will be required to remove near surface, loose, compressible soils, to remove loose soils as a result of demolition activities to a depth of at least 12 inches below subsurface improvements to be removed, and to remove undocumented fill soils. Over-excavation should be conducted to provide a uniform thickness of engineered fill below proposed structures. It is anticipated that the borrow pit area and flood control basin will need to be filled in during site preparation. In order to limit differential fill thickness below the proposed structures, engineered fill should not vary by more than one-foot in height across a horizontal distance of 10 feet.

- Preliminary evaluations indicate that footings should have a minimum depth of 18 inches (or 24 inches for two-story buildings) below rough pad grade or adjacent exterior grade, whichever is lower.

All final engineering and improvement plans shall be prepared in accordance with City of Delano standards prior to the issuance of building permits.

By ensuring compliance with all building standards and engineering recommendations, potential impacts from seismic ground shaking would be reduced to a **less than significant** level.

Liquefaction

Impact 3.6-2 There is a low, but not necessarily insignificant, potential for liquefaction at the project site, which could result in potential structural damage and associated human safety hazards. This is considered a **potentially significant** impact.

According to the geotechnical engineering report, perched groundwater was encountered at a depth of about 33 feet bsg in the east-central and southwestern portions of the project site. The groundwater encountered was considered to be a perched layer considering that a stiff to very stiff confining clay layer was encountered below groundwater depth, and soil layers below the confining clay layer were moist, but not wet. Because the groundwater encountered is a perched groundwater level and the regional groundwater table in the vicinity of the project site in recent years is estimated to be approximately 100 feet deep, the risk of liquefaction is considered low. However, water table elevations fluctuate with time, since they are dependent upon seasonal precipitation, irrigation, land use and climatic conditions as well as other factors. Water level observations at the time of field exploration may vary from those encountered during the construction phase and the design life of the project.

Implementation of Mitigation Measure **MM 3.6-1**, requiring the applicant to design all future development in accordance with the requirements of the California Building Code and the recommendations contained within the *Geotechnical Engineering Feasibility Investigation* prepared by The Twining Laboratories (May 19, 2005) would ensure that the effects of liquefaction would be **less than significant**.

Seismic Settlement

Impact 3.6-3 Construction of the proposed project could result in potential structural damage and associated human safety hazards resulting from seismically-induced ground settlement. This is considered a **potentially significant** impact.

Analysis of the east-central portion of the project site, which contained loose sandy soils from the ground surface to a depth of about 14 feet bsg, indicated that a total dry seismic settlement of about one quarter-inch was estimated as a result of shaking caused by the design basis earthquake. This settlement may not occur uniformly over the site due to variations in the thicknesses of different soil layers; therefore, a differential seismic settlement of about one quarter-inch across the proposed building pads should be anticipated.

Calculations indicated that static settlement of foundations placed directly on areas consisting of native silty sand and sandy silt soils would exceed a total settlement of one

inch. Combined seismic and static settlements of up to 1¼-inch are therefore anticipated. The on-site native soils and undocumented fill soils will not provide adequate direct support for proposed foundations and slabs-on-grade, exterior slabs, pavement walkways and asphaltic concrete pavements.

Implementation of Mitigation Measure **MM 3.6-1**, which requires that the project applicant design all future development in accordance with the requirements of the California Building Code and the recommendations contained within the *Geotechnical Engineering Feasibility Investigation* prepared by The Twining Laboratories (May 19, 2005) would ensure that the effects of seismic settlement would be **less than significant**.

Landslides

The project site and its surroundings are generally flat and level. There are no slopes or mapped landslides in the vicinity that possess significant landslide potential either as a result of strong seismic activity or site construction and there is very low potential for landsliding or slope stability problems. **No impact** is expected.

Short-Term Soil Erosion During Construction Activities

Impact 3.6-4 The proposed project has the potential to result in short-term soil erosion during construction activities. This is considered a **potentially significant** impact.

There is no evidence of significant soil erosion at the project site due primarily to level topography and soil type at the project site. However, soil erosion may occur with the construction of improvements such as buildings, roads, parking areas, drainage and other permanent improvements. Heavy earth moving equipment is used for site grading and compaction. In general, grading activities create the potential for increased ground instability and erosion. Grading and other construction-related activities would disturb the soil, which could increase soil erosion rates. All disturbed soil is subject to erosion with the amount of erosion dependent on soil type, vegetation cover, slope length and gradient.

Mitigation Measure **MM 3.8-2** requires that the applicant obtain a General Permit for Stormwater Discharges Associated with Construction Activities, as required by the National Pollution Discharge Elimination System (NPDES). As described in the mitigation measure, this permit includes preparation and submittal of a Stormwater Pollution Prevention Plan (SWPPP) that specifies how the discharger will protect water quality during construction activities.

Acquisition of the NPDES General Permit and implementation of a SWPPP will ensure that potential short-term soil erosion impacts generated during construction activities will be reduced to a **less than significant** level.

Soil Compressibility and Collapse Potential

Impact 3.6-5 Soils present on-site exhibit high compressibility and high collapse potential, which could result in damage to structures. This is considered a **potentially significant** impact.

Near surface sandy silts encountered in the southwestern portion of the project site, from the ground surface to 4 feet bsg, and in the soil borrow pit area, from 1 foot to 8 feet bsg, are loose and porous. Limited laboratory testing conducted by Twining Laboratories indicated that these soils are highly compressible and exhibited high collapse potential. Implementation of Mitigation Measure **MM 3.6-1**, which requires that the project applicant design all future development in accordance with the requirements of the California Building Code and the recommendations contained within the *Geotechnical Engineering Feasibility Investigation* prepared by Twining Laboratories (May 19, 2005) would ensure that the proposed project will not result in the collapse of proposed structures due to soil compressibility, which would have a **less than significant** impact.

Expansive Soils

Impact 3.6-6 Placement of new structures at the project site could result in potential structural damage and associated human safety hazards resulting from expansive soils at the project site. This is considered a **potentially significant** impact.

Expansive soils tend to swell with seasonal increases in soil moisture and shrink during the dry season as the soil moisture decreases. The volume change that the soils undergo in this cyclical pattern can stress and damage slabs and foundations if precautionary measures are not incorporated into the design and construction procedure. Near surface, expansive soils encountered at the project site were intermixed with near surface silty sands in the west-central portion of the site. In other areas, clay soils were encountered at depths of about 4 feet or deeper bsg. Expansion testing was performed on a representative sample of near surface soils as part of the preliminary geotechnical analysis. In general, a moderate expansion potential of near surface soils was encountered in localized areas of the project site.

The proposed project will be required to incorporate engineered fill specifications included in the *Geotechnical Engineering Feasibility Investigation* prepared by Twining Laboratories, as indicated by Mitigation Measure **MM 3.6-1**. Implementation of this mitigation measure will reduce potential impacts resulting from expansive soils to a **less than significant** level.

Soil Corrosivity

Impact 3.6-7 Soils on-site are moderately corrosive to buried metal objects and could result in damage to buried utilities. This is considered a **potentially significant** impact.

The risk of corrosion of construction materials relates to the potential for soil-induced chemical reaction. The rate of deterioration depends on soil resistivity, texture, acidity and chemical concentration. Results of the chemistry tests indicate that the soils located on-site are moderately corrosive. Implementation of the following mitigation measure would reduce this potentially significant impact to a **less than significant** level.

Mitigation Measure

MM 3.6-7 Subject to review and approval by the City of Delano, the project applicant shall utilize corrosion-resistant material in construction materials as specified in the *Geotechnical Engineering Feasibility Investigation* prepared by Twining Laboratories in May 2005. Buried metal objects would be protected by selecting materials resistant to mild corrosion per manufacturer's specifications.

Septic Systems

The proposed project would connect to the City of Delano sewer system and would not involve the construction of septic tanks or an alternative wastewater treatment system. Therefore, the proposed project would have **no impact** on soils necessary to support septic systems at the project site.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

The project will not combine with any other factors or projects and, thus, is not significant due to the localized, site-specific nature of geotechnical and seismic impacts. No significant cumulative impacts are predicted relative to geology or geologic hazards. Cumulative development would result in **no cumulative impacts**.

REFERENCES/DOCUMENTATION

City of Delano. *General Plan*. Adopted December 5, 2005.

City of Delano. *Notice of Preparation of a Draft Environmental Impact Report*. January 16, 2005.

Governor's Office of Planning and Research, State of California. *Guidelines for Implementation of the California Environmental Quality Act,* as amended. 2005.

The Twining Laboratories, Inc. *Draft Geotechnical Engineering Feasibility Investigation for Proposed Retail Development, Delano, CA*. May 19, 2005.

The Twining Laboratories, Inc. *Phase I Environmental Site Assessment*. August 29, 2004.

Section 3.7
Hazards and Hazardous Materials

This section of the RDEIR discusses the potential presence of hazardous materials and conditions within the project area and analyzes the potential risk of these conditions in proximity to existing and proposed development and human activities. The analysis is based primarily on the results of a Phase I Environmental Site Assessment (ESA) prepared in August 2004; a Limited Phase II ESA prepared in May 2005; and a subsequent Limited Phase II ESA prepared in September 2006 after release of the DEIR. These reports were prepared by Twining Laboratories, Inc. This section of the EIR also addresses potential safety hazards with the Delano Municipal Airport located approximately one half mile from the project site.

The Phase I ESA prepared in August 2004, the Limited Phase II ESA prepared in May 2005, and the subsequent Limited Phase II ESA prepared in September 2006 are included in Appendix F of this RDEIR, which is available for review at the City of Delano Community Development and Planning Department located at 1015 11th Avenue, Delano, CA 93216.

3.7.1 ENVIRONMENTAL SETTING

HAZARDOUS MATERIALS

A Phase I Environmental Site Assessment (ESA) was conducted to document environmental conditions at the project site and adjacent properties which could represent a public health and safety hazard. The focus of the Phase I ESA was to determine the presence or likely presence of any hazardous wastes and/or substances or petroleum products under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures at the project site or into the ground, groundwater or surface water. Based on the results of the Phase I ESA, a Limited Phase II ESA was conducted in May 2005 with a subsequent Limited Phase II ESA in September 2006. The Limited Phase II ESA completed in May 2005 included a geophysical survey, collection and analysis of soil samples at areas of concern and disposal of various hazardous materials identified during the Phase I ESA.

The purpose of the subsequent Limited Phase II ESA conducted in September 2006 was to investigate and collect subsurface soil samples at possible locations of the former underground storage tanks (USTs) and possible remaining piping based on an anomaly and fragmented conduits located during a geophysical survey. The soil samples were chemically analyzed to determine if there was a threat of a release of petroleum products to soil and/or groundwater below the project site in relation to a former truck stop located at the project site.

Phase I Environmental Site Assessment

The following is a summary of the information and conclusions contained in the Phase I ESA prepared by Twining Laboratories in August 2004.

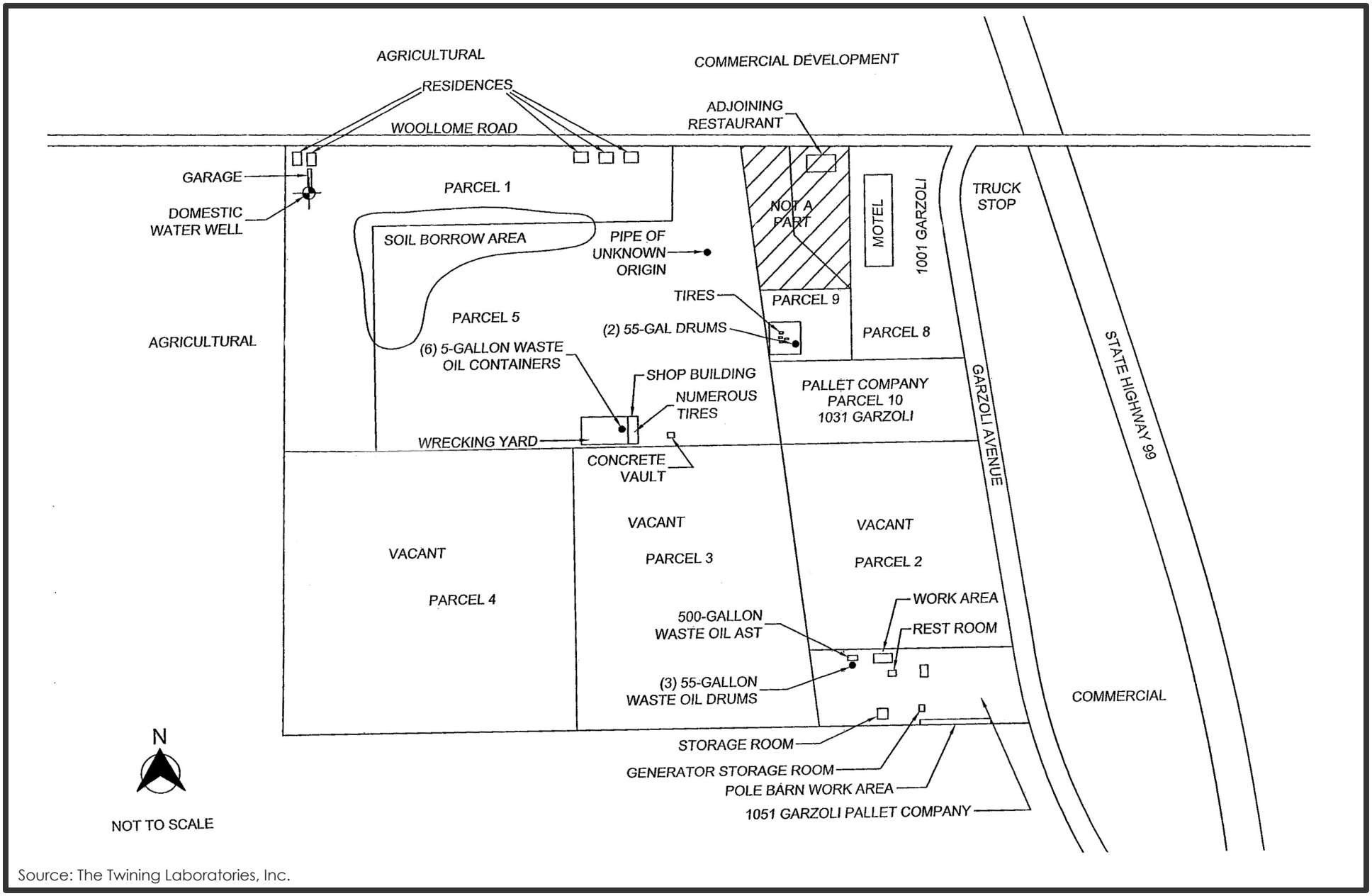
Existing and Historical Site Conditions

At the time of the site reconnaissance by Twining Laboratories, the 45-acre project site consisted of eight parcels with of a range of uses and improvements, including fallow agricultural land, single-family homes, a pallet-related business, a vacant wrecking shop and yard, a two-story motel and paved parking lot and a flood control basin. According to the project applicant, all structures have been demolished or are in the process of being demolished (Personal Communication with Geary Coats on February 8, 2006). Existing parcel locations and uses are shown in **Figure 3.7-1, Environmental Site Assessment Map**. Since the Phase I ESA was conducted by Twining Laboratories in 2004, the project applicant obtained demolition permits from the City and disposed of the materials in accordance with local, state, and federal regulations.

Based on research conducted as part of the Phase I ESA, the project site appears to have been undeveloped and vacant from at least 1937 until some time prior to 1952, when rural residential development occurred along Woollomes Avenue. Some soil borrowing may have occurred at the site during the construction of portions of State Route 99 in the late-1950s. Since at least the mid-1960s, a wrecking yard and shop building was in operation on the central portion (Parcel 5) of the site and a truck stop and restaurant were in operation on the northeastern portion (Parcel 8) of the site. The truck stop and restaurant were removed in approximately 1977 and a motel was constructed in their place during 1988. Portions of the project site along the eastern boundary have been leased for storage of materials related to the Redi-Mix company located to the east and for companies that store and build pallets. The majority of the southern portions of the site have remained vacant and undeveloped.

Observed Site Features

Specific indicators of environmental concern were evaluated for the project site and adjacent properties during the site reconnaissance. The project site was viewed for evidence of current and/or past use or storage of toxic or hazardous material; on-site ponds, landfills, drywells, waste streams or other disposal units; visible soil discoloration; above ground or underground storage tanks (UST); electrical transformers containing polychlorinated biphenyls (PCBs); and drums, barrels and other storage containers.



Source: The Twining Laboratories, Inc.

Environmental Site Assessment Map, March 2005

FIGURE 3.7-1
ENVIRONMENTAL SITE ASSESSMENT MAP

PMC

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Materials Storage

Six 5-gallon plastic containers were observed at the vacant wrecking yard located in Parcel 5. The containers were not capped with lids and appeared to contain waste oil. However, no spillage or staining of the soil was observed around these open containers.

Three 55-gallon drums of waste oil and a 500-gallon waste oil aboveground storage tank (AST) were observed on the northwestern portion of the pallet company yard on Parcel 2. A four-foot diameter area of soil staining was observed beneath the 55-gallon drums. Six 5-gallon gasoline containers and three gasoline-powered generators were observed within the plywood floored storage building on the south-central portion of the pallet facility on Parcel 2.

Two 55-gallon steel drums that appeared to be empty were observed within the perimeter of the flood control basin in Parcel 9. The former contents of the drums are unknown. No spillage or apparent soil staining was observed in association with the steel drums.

Underground Storage Tanks (UST) / Aboveground Storage Tanks (AST)

No evidence of USTs was observed during the site reconnaissance. A 500-gallon waste oil AST is located in the pallet company yard on Parcel 2.

Potential Polychlorinated Biphenyl (PCB) Containing Equipment

Two pole-mounted transformers were observed north of the vacant shop building in Parcel 5. A third pole-mounted transformer was observed along the eastern boundary of Parcel 5. No leakage or staining was observed in association with these transformers, which are owned and operated by Southern California Edison.

Pits, Ponds and Lagoons

The unlined stormwater basin within Parcel 9 is approximately 50 feet by 60 feet and contains two empty 55-gallon steel drums mentioned previously, as well as numerous used tires. A depressed area located within the northwest portion of Parcel 5 appears to be associated with soil borrowing, as indicated by interviews, aerial photographs and topographic maps. This area is approximately 300 by 200 feet and approximately five feet deep.

Pipelines and Pipes

No pipelines were observed on the project site; however, a pipe of unknown use or origin protrudes from the ground vertically approximately ten feet within Parcel 5. In addition, pipes extend from a subsurface vault east of the shop building in Parcel 5. This pipe and

vault may be related to an agricultural water pipeline. A subsurface canal water pipeline trends west to east on the site in front of the residences along Woollomes Avenue.

Water Wells

A non-operational water well is located in Parcel 1 at 456 Woollomes Avenue near the rear of the unattached garage. A concrete pad with a subsurface concrete vault was observed to the east of the former wrecking yard shop building in Parcel 5. The use of this vault is unknown; however, a pipe that appears consistent with water delivery extends from the bottom of the approximately 8-foot deep vault to the surface. This vault may have housed an agricultural water well or system. The vault was removed as part of the Phase II ESA.

Other Physical Evidence of Contamination

An indication of possible contamination was observed within the former wrecking yard in Parcel 5 as part of the Phase I ESA. The yard area appears to have been scraped or raked in the past. Also, vegetation appears stressed and not as prevalent within the yard area as it is outside the yard area, which may be an indication of surface soil impacts. Within Parcel 2, the plywood flooring in the generator storage room is stained with what appears to be spillage of gasoline from refueling of the generators.

Records Search

No information regarding investigations for the project site were found in files requested from the Kern County Environmental Health Services Department (KCEHSD), the Kern County Fire Department in Delano and the City of Delano.

For the purpose of the Phase I ESA, Twining Laboratories performed searches of available federal, state and local databases to identify known, recognized environmental conditions present on the site and at nearby properties which have the potential to adversely impact the project site.

The review of off-site properties indicates the Pioneer Auto and Truck Stop, located at 1000 Garzoli Avenue and adjoining the project site to the east, is listed on the State Water Resources Control Board (SWRCB) Leaking Underground Storage Tank (LUST) database and on the SWRCB Hazardous Waste and Substances (Cortese) database. In 1992, a soil vapor extraction system was installed due to leaking UST's. This operation was successful and site closure was granted by the KCEHSD. Another investigation in 1998 occurred during the removal of a UST on the property. Closure was granted for this removal and for another UST, which was abandoned in place. The SWRCB issued a letter dated April 25, 2003 that states the facility is not documented as having Under-Dispenser Containment (UDC) and as such is out of compliance with UST regulations.

Central Cal Equipment, Inc. (Berchtold Equipment) is located at 1300 Garzoli Avenue and is approximately 600 feet southeast of the project site. This facility is also listed within the SWRCB LUST and Cortese databases. A gasoline UST was removed in 1989 and a vapor extraction system was installed to remediate impacted soil. Closure was granted by KCEHSD in 1992. Based on the closed status and down gradient location of this facility, the environmental concern posed to the project site from this off-site source appears low.

Adjoining the project site to the northeast beyond the intersection of Woollomes Avenue and Garzoli Avenue is the former Bonkosky Gasoline Station. The KCEHSD has indicated that this former facility has four undocumented UST's. No additional information regarding this abandoned facility is available. According to representatives with KCEHSD, they are in the process of acquiring information for court proceedings regarding the responsible party for this site. Based on groundwater flow in the area trending to the east-southeast, the environmental concern posed to the project site from this potential off-site source appears low.

The former McFarland-Delano Sanitary Landfill is located approximately 700 feet southwest of the project site. This facility is listed within the U.S. Environmental Protection Agency's (EPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) and Facility Index System (FINDS) databases. According to the Kern County Waste Management Department, this landfill was closed in 1995 and capped on the surface. During 1999, a landfill gas system was installed and ongoing monitoring of the system indicates the landfill is stable and relatively dry. An upgradient (relative to the project site) monitoring well was installed in 2001, approximately 400 feet south of the project site. This well is sampled for background water quality and has been reported during all sampling events as None Detected (ND) for all constituents of concern.

PHASE II ESA

Following completion of the Phase I ESA, a limited Phase II ESA was prepared to address areas of concern within the project site and included collecting surface and subsurface soil samples at various locations on the project site and a geophysical survey to locate the reported UST at Parcel 8, the location of the Pioneer Hotel and of Parcel 5 to determine the extent and origin of the pipe of unknown use identified in the Phase I ESA. The following is a summary of the information and conclusions contained in the Limited Phase II ESA conducted by Twining Laboratories in May 2005 and the subsequent Limited Phase II prepared in September 2006 after release of the DEIR.

Soil Sampling and Analysis

The Phase II ESA included soil sample analysis to determine if petroleum product constituents (PPCs), volatile organic constituents, and/or hazardous concentrations of metals exist at four areas of concern at the project site within Parcels 9, 2, and two areas

within Parcel 5. The results of the analysis indicate total recoverable petroleum hydrocarbons (TRPH) concentrations ranged from none detected to 30 mg/kg. TRPH concentrations identified in the samples are below listed screening levels. Cadmium, chromium, lead, nickel and zinc were not detected at or above laboratory reporting requirements or were below ten times the soluble threshold limit concentrations (STLC) as identified in the California Code of Regulations (CCR) Title 22, Section 66261.

Geophysical Survey

A geophysical survey was conducted on Parcel 8, the former location of the Pioneer Hotel, to locate evidence of USTs and/or remaining product piping. A similar survey was conducted on Parcel 5 to determine the extent and origin of the pipe of unknown use. The survey on Parcel 5 could not detect the presence of an underground metallic line extending from the pipe of unknown use. It could not be determined if the pipe was attached to a concrete or clay pipe. The survey identified three abnormalities in the parking lot of the former Pioneer Hotel. The Limited Phase II ESA completed in May 2005 determined that drilling and soil sampling should be completed to determine the evidence of a leaking underground storage tank or leaking product line(s).

SUBSEQUENT LIMITED PHASE II ESA

A subsequent Limited Phase II ESA completed in September 2006 by Twining Laboratories Inc. included soil sampling and analyses in the anomaly area and possible product lines area located directly northeast of the anomaly determined by the geophysical survey. This limited Phase II ESA is included in Appendix F of this RDEIR. In the area where the former USTs may have been located, three soil samples were obtained from drilling down to 15-feet below site grade (bsg) (Sample B7 at 15 feet and Sample B9 at 15 feet) with a truck mounted drill rig and driving a steel sample tube into the soil with a trip hammer. In the areas where the former product lines may have been located, seven soil samples (B1 through B6 at five feet and B10 at two feet) were obtained by drilling down to the target depth of five feet bsg (one soil sample for every 15-feet of possible product line) and driving a steel sample tube into the soil with a trip hammer. The exception was a boring (B10) at this location, which was drilled to two feet, the deepest a hand auger could be advanced due to cobbles which created a drilling obstruction.

Soil samples were field screened using a photoionization detector (PID) for evidence of petroleum hydrocarbon constituents. The soil samples did not contain obvious soil discoloration of hydrocarbon odor. The soil samples were transported and submitted to a California certified laboratory for analyses under proper chain-of-custody protocols. Soil samples collected from the field investigation were tested in the laboratory for Total Petroleum Hydrocarbons as referenced to gasoline (TPH-g) using the United States Environmental Protection Agency's (U.S. EPA) Method 8015/8021B; Total Petroleum Hydrocarbons as reference to diesel (TPH-D) by U.S. EPA Method 8015M; Benzene,

Toluene, Ethyl-benzene, and Xylenes (BTEX), and Methyl Tertiary-Butyl Ehter (MTBE) using the U.S. EPA Method 8015/8012B, and total lead using the U.S. EPA Method 6010B.

A summary of the analytical results is incorporated in the Appendix of the RDEIR. The results for TPH-g, BTEX, and MTBE were negative for borings B1 through B10. The results for TPH-d with the exception of soil samples B6 at 5 feet and B10 at 2 feet contained samples of lead at 8.7 mg/kg, 12 mg/kg, and 7.5 mg/kg, respectively. Lead concentrations in these samples were below ten times the Soluble Threshold Limit Concentrations (STLC) as identified in the California Code of Regulations, Title 22, Section 66261.

The laboratory analytical results of the soil samples obtained from the project site indicate TPH-d concentrations in the soil range from none detected to 60 mg/kg. Preliminary Remediation Goals (PRGs) established by Region 9 of the U.S. EPA are not inclusive of TPH-d. The California Regional Water Quality Control Board, San Francisco Bay Region prepared an Interim Final report in February 2005 titled "Application of Risk-Based Screening Levels and Decision Making to Sites Impacted Soil and Groundwater." *Volume 2, Background Documentation for the Development of Tier 1 Soil and Groundwater Screening Levels,* establishes a risk-based screening level of TPH-d (middle distillates) of 100 mg/kg. TPH-d concentrations identified in the soil samples are below the listed screening levels.

Due to the absence of gasoline in soil samples from the project site, the detection of lead is assumed to be from an inorganic source and most likely representative of background levels in the soil at the project site. Analytical results for lead ranged from none detected to 8.7 mg/kg or below ten times the applicable STLC in the soil samples obtained from borings B1 through B10. Analytical results for soil samples obtained from borings B1 through B10 were negative for TPH-g, BTEX, and MTBE.

Removal of Subsurface Concrete Vault and Waste Disposal

Twining Laboratories coordinated the removal of a subsurface concrete vault located on Parcel 5 and the disposal of waste oil, associated oil containers, and tires located on the project site. There were no obvious hydrocarbon or pungent odors or discoloration on the vault or in the soils surrounding the vault. The excavation was backfilled with on-site soils and compacted. It is estimated that approximately 165 gallons of waste oil and up to 200 tires were removed from the project site. The waste materials were removed from the project site and disposed at an appropriate disposal facility under appropriate waste manifest documentation.

Delano Municipal Airport

The proposed project is located approximately one half mile west of the Delano Municipal Airport and within Zone C (Common Traffic Pattern) of the Airport Influence Area, as

delineated on the *Kern County Airport Land Use Compatibility Plan* shown in **Figure 3.7-2, Airport Compatibility Zones**.

3.7.2 REGULATORY SETTING

DEFINITION OF HAZARDOUS MATERIALS

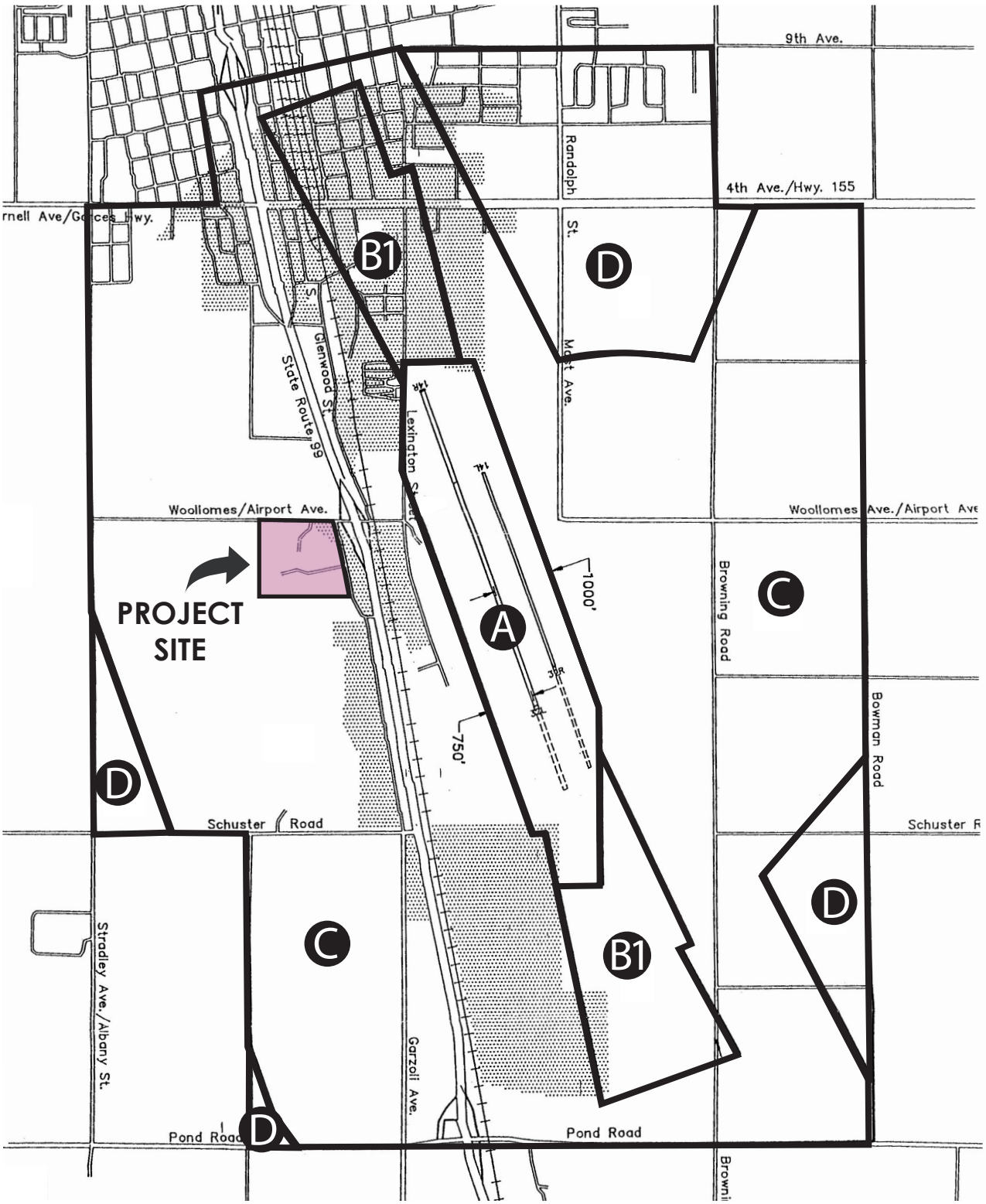
A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in Title 22 of the California Code of Regulations (CCR) as:

> *…a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed (California Code of Regulations, Title 22, Section 66260.10).*

Chemical and physical properties cause a substance to be considered hazardous, including the properties of toxicity, ignitability, corrosivity, and reactivity. These terms are defined in the CCR, Title 22, and Sections 66261.20-66261.24. Factors that influence the health effects of exposure to hazardous material include the dose to which the person is exposed, the frequency of exposure, the exposure pathway and individual susceptibility.

FEDERAL REGULATIONS

The Environmental Protection Agency (EPA) provides leadership in the nation's environmental science, research education and assessment efforts. The EPA works closely with other federal agencies, including the Occupational Safety and Health Administration (OSHA), the Department of Transportation (DOT) and the National Institute of Health (NIH), state and local governments and Native American tribes to develop and enforce regulations under existing laws. The EPA is 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.



Source: Kern County Airport, Land Use Compatibility Plan

Delano Municipal Airport Compatibility Zones, March 2005

0 1000 2000
Scale in Feet

Figure 3.7-2
Delano Municipal Airport Compatibility Zones

PMC

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Prior to August 1992, the principal agency at the federal level regulating the generation, transport and disposal of hazardous waste was the EPA under the authority of the Resource Conservation and Recovery Act (RCRA). As of August 1, 1992, however, the California Department of Toxic Substance Control (DTSC) was authorized to implement the State's hazardous waste management program for the EPA. The federal EPA continues to regulate hazardous substances under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

Comprehensive Environmental Response, Compensation and Liability Act

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites and established a trust fund to provide for cleanup when no responsible party could be identified.

The law authorizes two kinds of response actions: Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response, and long-term remedial response actions, that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. These actions can be conducted only at sites listed on EPA's National Priorities List (NPL).

Resource Conservation and Recovery Act

Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901 et seq. (1976), gave EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage and disposal of hazardous waste. In addition, RCRA set forth a framework for the management of non-hazardous wastes.

The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. RCRA focuses only on active and future facilities and does not address abandoned or historical sites (see CERCLA).

The Federal Hazardous and Solid Waste Amendments (HSWA) are the 1984 amendments to RCRA that required phasing out land disposal of hazardous waste. Some of the other mandates of this law include increased EPA enforcement authority, more stringent

hazardous waste management standards and a comprehensive underground storage tank program.

Federal Toxic Substances Control Act

Congress enacted the Toxic Substances Control Act (TSCA) in 1976 (15 U.S.C. Sections 2601 et seq.), to become effective January 1, 1977. The act authorizes the Environmental Protection Agency (EPA) to secure information on all new and existing chemical substances and to control any of these substances determined to cause an unreasonable risk to public health or the environment. TSCA also includes requirements for the storage, use, and disposal of Polychlorinated Biphenyl (PCB)-containing materials.

Federal Insecticide, Fungicide, and Rodenticide Act

The primary focus of the 1976 Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), U.S.C. Sections 136 et seq., was to provide federal control of pesticide distribution, sale, and use. EPA was given authority under FIFRA not only to study the consequences of pesticide usage but also to require users (farmers, utility companies, and others) to register when purchasing pesticides. Through later amendments to the law, users also must take exams for certification as applicators of pesticides. All pesticides used in the U.S. must be registered (licensed) by the EPA. Registration assures that pesticides will be properly labeled and that if in accordance with specifications, will not cause unreasonable harm to the environment.

STATE REGULATIONS

The California Environmental Protection Agency (Cal-EPA) and the State Water Resources Control Board (SWRCB) establish rules governing the use of hazardous materials and the management of hazardous waste. Within Cal-EPA, California Department of Toxic Substance Control (DTSC) has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the state agency for the management of hazardous materials and the generation, transport and disposal of hazardous waste.

California Health and Safety Code

Kern County is currently responsible for implementing Chapter 6.95 of Division 20 of the California Health and Safety Code (Section 25500 et seq.), relating to hazardous materials release response plans and inventory.

California Water Code

California Water Code Section 231 requires the California Department of Water Resources to develop well standards to protect California's groundwater quality. DWR Bulletin 74-90 (Supplement to Bulletin 74-81), California Well Standards, Water Wells, Monitoring Wells, Cathodic Protection Wells, June 1991, contains the minimum requirements for constructing, altering, maintaining and destroying these types of wells. The standards apply to all water well drillers in California and the local agencies that enforce them.

Hazardous Waste Control Laws

The California Hazardous Waste Control laws (HWCL) are the State's equivalent to RCRA and closely parallels RCRA by regulating the generation, storage, transportation, treatment and disposal of hazardous waste in the State. The primary authority for enforcement of HWCL and RCRA itself lies with the DTSC. The State of California has been granted authorization by the EPA to administer all regulations under both RCRA and the State's HWCL.

California Department of Transportation, Division of Aeronautics

The proposed project is located approximately ½-mile west of the Delano Municipal Airport and within the Airport Influence Area as delineated by the Kern County Airport Land Use Compatibility Plan. State law requires that an EIR for projects located within such an area evaluate impacts regarding safety and noise by utilizing the California Airport Land Use Planning Handbook, published by the California Department of Transportation, as a technical resource.

Cal/OSHA

The California Occupational Safety and Health Administration (Cal/OSHA) is responsible for implementing workplace regulations. Cal/OSHA considers an asbestos-containing material (ACM) as one containing at least one-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 ACM. Requirements specifically addressing asbestos are contained in Title 8 of the California Code of Regulations (CCR) and in the California Health and Safety Code.

REGIONAL REGULATIONS

San Joaquin Valley Unified Air Pollution Control District (SJVAPCD)

Under District Rule 4002, the SJVAPCD adopted regulations and policies implementing asbestos demolition and renovation requirements developed by the U.S. Environmental

Protection Agency (EPA), known as the National Emission Standards for Hazardous Air Pollutants (NESHAP). NESHAP requires that a thorough inspection for asbestos-containing material be conducted before any regulated facility is demolished or renovated. Any building, including any dwelling at the site of a proposed public or commercial project such as a new shopping mall, is a regulated facility subject to this regulation.

LOCAL REGULATIONS

Kern County Environmental Health Services Department (KCEHSD)

In 1995, the Certified Unified Program Agency (CUPA) was developed to consolidate all County hazardous materials programs under one agency. The KCEHSD has been designated the lead agency for hazardous materials programs and acts as the single point of contact for issuance of permits. Site inspections of all hazardous materials programs (i.e., aboveground tanks and underground tanks, hazardous waste treatment, hazardous waste generators, hazardous materials management plans, etc.) are consolidated and accomplished by a single inspection. All businesses that handle or store hazardous materials above 55 gallons for liquids, 400 pounds for solids; and 200 cubic feet for compressed gases are required to complete forms and file a Hazardous Materials Business Plan and Chemical Inventory with the KCEHSD. Lower thresholds are typically mandated for "Acutely Hazardous Substances." A site map and emergency plan are also required to be submitted by all businesses that submit a Hazardous Materials Business Plan and Chemical Inventory.

The program provides emergency response to chemical events to furnish substance identification; health and environment risk assessment; air, soil, water and waste sample collection; incident mitigation and cleanup feasibility options and on-scene coordination for state superfund incidents. The program also provides for the oversight, investigation and remediation of unauthorized releases from underground tanks.

Kern County Special Waste Facility

The Kern County Special Waste Facility serves the hazardous waste disposal needs of businesses within Kern County. The Conditionally Exempt Small Quantity Generator (CESQG) Program allows eligible businesses to bring hazardous waste to the County's Special Waste Facility. This program is sponsored by the Kern County Waste Management Department and grants received from the California Integrated Waste Management Board. State and Federal hazardous waste laws limit the use of this type of hazardous waste collection program to businesses that qualify as Conditionally Exempt Small Quantity Generators (CESQGs). To qualify as a CESQG, a business must generate less than 27 gallons or 220 pounds of hazardous waste per month, including a maximum of 1 quart or 2.2 pounds of acutely hazardous waste. Businesses that generate more than these amounts are required to use a licensed hazardous waste hauler to manifest and transport their waste.

3.7.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based upon the CEQA Guidelines and standards used by the City of Delano. For the purposes of this EIR, impacts are considered significant if the following could result from implementation of the proposed project:

1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

2) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (during operation or construction);

3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within a quarter mile of an existing or proposed school;

4) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result would create a significant hazard to the public or the environment;

5) Be located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public or private airport, public use airport, or private airstrip, and thus result in a safety hazard for people residing or working in the project area;

6) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or,

7) Expose people or structures to a significant risk or loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

METHODOLOGY

Twining Laboratories, Inc. prepared a Phase I ESA in August, 2004; a Limited Phase II ESA in May 2005; and a subsequent Limited Phase II ESA in September 2006 after release of the DEIR in conformance with the American Society for Testing and Materials (ASTM) E1527-00 Standard Practice for Environmental Site Assessments. The Phase I ESA researched past activities, practices and materials that are subject to environmental regulation governing contamination of soil and/or groundwater and included multiple site visits. The Limited Phase II ESA included a geophysical survey, soil sampling and coordinating the removal of

hazardous materials. Soil sampling was performed at the areas of concern: Parcel 9 at the stormwater retention basin; Parcel 2 beneath the hazardous material storage areas and beneath the plywood floor of the generator storage room; Parcel 5, where waste oil containers were stored and areas of stressed vegetation; and below the concrete vault located on Parcel 5. Twining Laboratories, Inc. coordinated the appropriate disposal of the on-site waste oil, associated oil containers and tires located at the project site. A subsequent Limited Phase II ESA was completed in September 2006 after release of the DEIR, which included soil sampling and analyses in the anomaly area and the possible product lines area located directly northeast of the anomaly identified by the geophysical survey in the Limited Phase II ESA completed in May 2005.

Since PMC conducted the site reconnaissance in January 2005 and release of the DEIR, all of the structures have been demolished. The project applicant obtained demolition permits from the City and disposed of the materials in accordance with local, state, and federal regulations.

PROJECT IMPACTS AND MITIGATION MEASURES

Release of Hazardous Materials

Impact 3.7-1 Development of the proposed project may expose people, property or the environment to risks associated with soil contamination from hazardous and potentially hazardous material at the project site. This is considered a **less than significant** impact.

The project site was not included on a list of hazardous materials sites pursuant to Government Code Section 65962.5. However, the project site contains several areas that were identified in the Phase I ESA as areas that may be contaminated with hazardous materials. A Limited Phase II ESA was performed to collect soil samples from the areas of concern and analyze those samples for hazardous contaminates, such as total petroleum hydrocarbons (TRPH), volatile organic constituents (VOC) and selected metals. Concentrations of TRPH and VOC were detected; however, the concentrations were below hazardous levels. As part of the Limited Phase II ESA, waste oil containers and tires located throughout the project site were removed and properly disposed of at the landfill.

A former truck stop diesel fueling station was located in the general location of the former Pioneer Motel. Building permits reviewed for the former truck stop indicate that two tanks were removed and the excavations were backfilled with fill soil. As part of the Phase II ESA, a geophysical survey was performed to locate evidence of reported USTs and/or remaining piping. Three abnormalities in the parking lot of the former Pioneer Hotel were identified as part of the limited Phase II ESA that indicate there may be residual contamination associated with the removal of the tanks, associated with the former truck stop/diesel fueling station. A follow up limited Phase II ESA was completed in September

2006, which included soil sampling and analyses in the anomaly area and the possible product lines area located directly northeast of the anomaly determined by the geophysical survey. This limited Phase II ESA is included in Appendix F. In the area where the former USTs may have been located, three soil samples were obtained from drilling down to 15-feet below site grade (bsg) (Sample B7 at 15 feet and Sample B9 at 15 feet) and with a truck mounted drill rig and driving a steel sample tube into the soil with a trip hammer. In the areas where the former product lines may have been located, seven soil samples (B1 through B6 at five feet and B10 at two feet) were obtained by drilling down to the target depth of five feet bsg (one soil sample for every 15-feet of possible product line) and driving a steel sample tube into the soil with a trip hammer. The exception was a boring (B10) at this location which was drilled to two feet, the deepest a hand auger could be advanced due to cobbles which created a drilling obstruction.

Soil samples were field screened using a photoionization detector (PID) for evidence of petroleum hydrocarbon constituents. The soil samples did not contain obvious soil discoloration of hydrocarbon odor. The soil samples were transported to a California certified laboratory for analyses under proper chain-of-custody protocols. After the soil samples were collected, the ends of the sleeves were covered with Teflon tape and plastic end caps. Each soil sample was labeled with the sampler's name, designation identification, and time and date that the sample was collected. Soil samples were placed in an ice chest and cooled with ice. The soil samples were transported and submitted to a California certified laboratory for analyses under proper chain-of-custody (COC) protocols. Soil cuttings generated during drillings were stored on and covered with plastic sheets per later disposal, if found impacted. Borings were backfilled with a 6-sack sand cement mix to grade. Twining Laboratories performed field and laboratory activities according to their Standard Operating Procedures which are included in the appendix.

Soil samples collected from the field investigation were tested in the laboratory for Total Petroleum Hydrocarbons as referenced to gasoline (TPH-g) using the United States Environmental Protection Agency's (U.S. EPA) Method 8015/8021B, Total Petroleum Hydrocarbons as reference to diesel (TPH-D) by U.S. EPA Method 8015M, Benzene, Toluene, Ethyl-benzene, and Xylenes (BTEX), and Methyl Tertiary-Butyl Ehter (MTBE) using the U.S. EPA Method 8015/8012B, and total lead using U.S. EPA 6010B.

A summary of the analytical results is incorporated in the Appendix. The results for TPH-g, BTEX, and MTBE were negative for borings B1 through B10. The results for TPH-d with the exemption of soil samples B6 at 5 feet and B10 at 2 feet contained samples of lead at 8.7 mg/kg, 12 mg/kg, and 7.5 mg/kg, respectively. Lead concentrations in these samples were below ten times the Soluble Threshold Limit Concentrations (STLC) as identified in the California Code of Regulations, Title 22, Section 66261.

The laboratory analytical results of the soil samples obtained from the Site indicate TPH-d concentrations in soil ranging from none detected to 60 mg/kg. Preliminary Remediation Goals (PRGs) established by Region 9 of the U.S. Environmental Protection Agency (U.S. EPA) are not inclusive of TPH-d. The California Regional Water Quality Control Board, San Francisco Bay Region prepared an Interim Final report in February 2005 titled "Application of Risk-Based Screening Levels and Decision Making to Sites Impacted Soil and Groundwater." Volume 2, Background Documentation for the Development of Tier 1 Soil and Groundwater Screening Levels, establishes a risk-based screening level of TPH-d (middle distillates) of 100 mg/kg. TPH-d concentrations identified in the soil samples are below the listed screening levels.

Due to the absence of gasoline in soil samples from the project site, the detection of lead is assumed to be from an inorganic source and most likely representative of background levels in the soil at the project site. Analytical results for lead ranged from none detected to 8.7 mg/kg or below ten times the applicable STLC in the soil samples obtained from borings B1 through B10. Analytical results for soil samples obtained from borings B1 through B10 were negative for TPH-g, BTEX, and MTBE. Based on the subsequent Phase II ESA prepared for the proposed project, the project site does not contain contamination from hazardous materials that would expose people, property, or the environment to risks associated with soil contamination from hazardous and potentially hazardous materials at the project site, which would be considered a **less than significant impact.**

Exposure to Hazardous Materials Due to Septic Systems

Impact 3.7-2 Implementation of the proposed project may expose people or property to hazardous materials in connection with the historical use of septic tanks at the project site, which are considered a source of residual contamination. This is considered a **potentially significant** impact.

The former residences located along Woollomes Avenue are connected to the municipal sanitary sewer system; however, the historical disposal of sewage may have been handled by on-site septic systems. No contamination was discovered as part of the Phase I or Limited Phase II ESA, however septic systems can be a source of residual contamination. In order to reduce potential impacts regarding subsurface contamination related to the abandoned septic system, the following mitigation measure would ensure that any former septic systems located at the project site are removed in accordance with state and local regulations.

Mitigation Measure

MM 3.7-2 The project applicant shall ensure that any septic systems that are identified or encountered during site preparation and grading activities are properly

removed in accordance with state regulations and the requirements of the County of Kern.

Implementation of the above mitigation measures will reduce potential impacts from abandoned septic systems to a **less than significant** level.

Abandoned Water Well and Piping

Impact 3.7-3 There is a non-operational water well and a pipe of unknown origin located at the project site. The presence of these features is considered a **potentially significant** impact.

There is a non-operational water well located at the former residence located at 456 Woollomes Avenue. In addition, a metal pipe extends from the ground vertically approximately 10 feet in the northeastern portion of Parcel 5. As part of the Phase II ESA, a geophysical survey was performed to determine the extent and origin of the pipe of unknown use. The survey did not detect the presence of an underground metallic line extending from the vertical pipe. Technologies used during the survey were unable to detect if this pipe was connected to a concrete or clay pipe, commonly used in irrigation systems. Water wells could act as a conduit for groundwater contamination. In order to reduce potential impacts related to the water well and pipe, the following mitigation measure will be required.

Mitigation Measure

MM 3.7-3 Prior to commencement of site clearing and general demolition activities, the project applicant shall abandon any irrigation supply water wells and piping that are not proposed for future use in accordance with local and state regulations, subject to review and approval by the City of Delano.

Implementation of the above mitigation measures will reduce potential impacts from water wells and irrigation piping to a **less than significant** level.

Planned Gas Station and Tire/Lube Services

Impact 3.7-4 The proposed project includes a 14-position gas station and tire and lube services at the proposed Wal-Mart Supercenter, which would involve potentially hazardous storage and handling of gasoline and other hazardous materials. Compliance with the regulations of the Kern County Environmental Health Services Department and the SJVAPCD would ensure that the proposed project would have a **less than significant** impact.

As shown on the project site plan in **Figure 2-8, Site Plan**, the proposed project includes a 14-position gas station and commercial uses including a home improvement store and a tire and lube facility within the Wal-Mart Supercenter. The gas station would likely include several large underground fuel storage tanks, which would be potentially subject to leaks and spills and could result in soil and groundwater contamination. Commercial uses at the project site may also involve the use and storage of potentially hazardous materials.

Tire and Lube Facility

The proposed tire/lube service component of the Wal-Mart Supercenter would perform minor vehicle servicing such as tire changes, battery replacement, and general fluid service. According to Wal-Mart officials, the Wal-Mart Supercenter recycles 100 percent of all waste tires generated in its stores in compliance with California regulations. The proposed lube service component of the Wal-Mart Supercenter shall utilize an oil filter crusher to harvest the maximum of amount of oil for recycling and to capture oil so that spills will not contaminate stormwater runoff. The floor drains in the proposed tire and lube facility will connect to an oil interceptor to capture oil. Pre-fabricated oil interceptors will be used to further reduce the potential for contamination.

Consumption of Materials and Generation of Hazardous Waste

According to Wal-Mart officials, on an annual basis the proposed tire/lube service component will use approximately 8,000 gallons of recycled bulk motor oil; 4,000 new containers of motor oil; twelve 30-pound containers of grease/lube; 5,000 gallons of windshield washer fluid; 3,600 batteries; and approximately 180 tires. The proposed tire/lube facility would annually generate approximately 11,676 gallons of used motor oil; 11,000 used motor oil filters; 1,800 gallons of oil water separator pumpage; 2,300 gallons of grease trap pumpage; 3,000 oily rags; and 3,300 used batteries. The used motor oil, oil filters, oily rags, batteries, and oil water from the separator pump would be recycled.

Gas Station

The proposed gas station will be required to comply with the San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4622 (Gasoline Transfer into Motor Vehicles). This rule requires that gasoline dispensing facilities conduct regular inspections and maintain an Operations and Maintenance Manual. Inspection of the gasoline vapor recovery system is required with the frequency of inspection dependent upon the volume of gasoline dispensed per month. Gasoline vapors are released during the filling of both underground storage tanks and the transfer of fuel from those tanks to individual vehicles. These vapors contain Toxic Air Contaminants (TACs) such as benzene. For a full discussion of TACs, see **Section 3.3**, **Air Quality**.

Under California Health and Safety Code Section 25503.5, any activity involving the handling of hazardous materials requires the establishment and implementation of a Hazardous Materials Business Response Plan. In addition, according to the KCEHSD, all businesses that handle or store hazardous materials above the following threshold quantities must file a Hazardous Materials Business Plan, Chemical Information, and Contingency Plan with the KCEHSD: 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases. Lower threshold quantities may be mandated for "Acutely Hazardous Substances." The elements of the Hazardous Materials Business Plan, Chemical Information, and Contingency Plan would include including the following components (if applicable): submittal of a Hazardous Materials Release Response Plan and Inventory Program; Uniform Fire Code Plans and Inventory Requirements; Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs; California Accidental Release Prevention Program; Underground Storage Tank Program; and Aboveground Petroleum Storage Tank Spill Prevention Control and Countermeasure Plan (SPCC). All applicable plans are required to be submitted to the County for hazardous materials use and storage at the project site. Failure to submit the applicable forms may result in legal action on behalf of the County.

The proposed operation of the tire and lube facility and compliance with the regulations of the KCEHSD and the SJVAPCD would ensure that the proposed project does not create a significant hazard to the public or the environment by releasing hazardous materials into the environment. Therefore, this impact is considered **less than significant**.

Safety and Noise Hazards from Airport Operations

Impact 3.7-5 The project site is located approximately one half mile west of the Delano Municipal Airport. The proposed project could expose people to excessive noise levels and safety hazards from aircraft operations in the vicinity of the project site. This is considered a **less than significant** impact.

The proposed project is located approximately one half mile west of the Delano Municipal Airport and within Zone C (Common Traffic Pattern) of the Airport Influence Area, as delineated on the *Kern County Airport Land Use Compatibility Plan*, shown in **Figure 3.7-2, Delano Municipal Airport Compatibility Zones**. According to the "Delano Airport Compatibility Criteria" (*Zoning Ordinance* Section 20.3.30), the proposed project is subject to density and open space requirements for Zone C. As a commercial development, the proposed project site would have a maximum density restriction of 150 people per acre at any time. In addition, 15 percent of all land within the entire Zone C must remain as Open Land. This is typically accomplished through implementation of the City's General Plan, Zoning Ordinance and any specific plans that may be applicable.

The *California Airport Land Use Planning Handbook* (Caltrans 2002), published by the California Department of Transportation, provides guidance for calculating the estimated density of the proposed project in Appendix C, "Methods for Determining Concentrations of People". The "Parking Ordinance" method calculates the maximum number of people per acre that would be present at any one time, based upon the number of parking spaces provided. According to the handbook, this method is appropriate when the proposed land use is expected to be dependent upon access by vehicles, as would be the case with the proposed project. The maximum allowable density of 150 people per acre multiplied by the 45-acre site results in a maximum density of 6,750 people which would be allowed to occupy the project site at any time. Therefore, in order to exceed the density threshold for Zone C, it would require that all of the proposed 2,242 parking spaces be filled at the same time with an average vehicle occupancy rate of 3.0 persons per vehicle. As the likelihood of this scenario would be extremely rare, the proposed project would be in compliance with maximum density restrictions and the impact is considered **less than significant**.

Development within the project site will also be subject to regulations found within the City's *Zoning Ordinance* Section 20.3.30, "Airport Approach Height Combining District (H)." These regulations require that the proposed project be consistent with the *City of Delano General Plan*, *Zoning Ordinance*, the *Delano Municipal Airport Master Plan*, and the *Kern County Airport Land Use Compatibility Plan*; the proposed use does not involve the storage or dispensing of volatile or otherwise hazardous substances that would endanger aircraft operations; the proposed use does not attract large concentrations of birds, produce smoke, generate electrical interference, reflect glare or light, or emit radio transmissions that may endanger aircraft operations; the proposed use complies with the City's noise standards; and the proposed use will not adversely affect safe air navigation, airport operations, or interfere with airport communications.

In addition, proposed structures and the normal mature height of vegetation shall not exceed the height limitations contained in Federal Aviation Regulations (FAR), Part 77, "Objects Affecting Navigable Airspace." Section 77.23 states that proposed structures and vegetation would be an obstruction to air navigation if they would be of greater height than 500 feet above ground level at the project site; 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of the airport; or greater than the surface of a takeoff and landing area or any imaginary surface. Section 77.25 establishes civil airport imaginary surfaces related to airport location and runway configurations. According to the *Kern County Airport Land Use Compatibility Plan*, the project site is located within the Horizontal Surface area of the Delano Municipal Airport. This area is a horizontal plane that begins 150 feet above the established airport elevation.

Potential light and glare impacts will be addressed in the site plan and design review process described in **Section 3.1**, **Aesthetics and Visual Resources**. The project site is not

located within the 60 dBA Ldn/CNEL noise contour zones of the airport. Planned structures and vegetation will not exceed FAR Part 77 height requirements. Therefore, the proposed project would be in compliance with the requirements of Section 20.3.30 of the City's *Zoning Ordinance* and this impact is considered **less than significant**.

Emergency Response Plan/Emergency Evacuation Plan

The City of Delano currently has no established Emergency Response Plan or designated Emergency Evacuation Routes. Emergency responses are incident driven and specific to the crisis situation. However, protective service crews follow an organized protocol when emergencies calls are dispatched. Upon receipt of the emergency call, emergency teams are briefed on the situation and a plan is determined and implemented at that time. The evacuation route is dependent on where the emergency takes place and where the most accessible roads are located in proximity to the incident (Personal Communication with Chief of Police, Mark DeRosia on February 13, 2007). Therefore, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and **no impact** is anticipated.

Wildland Fire

Wildland fire impact may be considered significant if the proposed project would 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. However, the project site consists of rural residential uses, commercial uses and agricultural land and is not located in an area prone to wildland fire or excessive fuel loading. Therefore the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires and **no impact** is anticipated.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Risk of Exposure to Hazardous Waste or Materials

Impact 3.7-6 Implementation of the proposed project in addition to cumulative development associated with buildout of the General Plan may result in cumulative hazardous risk impacts. This is considered a **less than significant** impact.

Implementation of the proposed project would result in potential short-term impacts during construction activities associated with exposure to hazardous substances such as waste oil and hazards due to abandoned septic systems and water wells. However, hazardous materials impacts would be site-specific and are generally not affected by cumulative development in the region. As described in this section, with proper implementation of

mitigation measures incorporated herein, the proposed project would not contribute to an increase in the potential for soil or groundwater contamination or the potential risk of upset as a result of current or past land use. The proposed project will not combine with any planned growth in the area to form an impact greater or more significant than the project impact alone. Therefore, the cumulative impact is considered **less than significant**.

REFERENCES/DOCUMENTATION

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SECTION 3.8
SURFACE WATER HYDROLOGY AND WATER QUALITY

This section of the environmental impact report discusses the surface hydrology, groundwater and water quality relative to the Delano area and the project site. Changes in drainage patterns, flooding, erosion and degradation of existing water quality are analyzed. Information provided in this section is based primarily on the applicant's preliminary drainage study prepared by Landmark Surveying & Engineering (2005). Additional information is provided by the City of Delano's *Development Cost and Fee Study* (2004). **Section 3.13 Utilities and Services** includes discussion of groundwater, potable water demand, and expansion of wastewater collection and treatment systems. Stormwater runoff calculations are included in Appendix G of the RDEIR. A flood evaluation of the flooding sources and their effects on the base flood elevation (BFE) for the project site was prepared by The Lusich Company, Inc. in December 2006. The flood evaluation study is included as Appendix G of the RDEIR, however due to the size of the appendices, they are available for review at the City of Delano Community Development and Planning Department located at 1015 11th Avenue, Delano, CA 93216.

3.8.1 EXISTING SETTING

REGIONAL SETTING

Drainage Pattern

The City of Delano is situated in the San Joaquin Valley, a structural trough whose main axis trends northwest-southeast and is bordered on the east by the Sierra Nevada range and on the west by the Coast Ranges. The low alluvial plains and fans in the San Joaquin Valley floor are relatively flat and featureless, occupying most of the floor's area. Delano has a Mediterranean climate characterized by warm and dry summers with little or no precipitation and cool and moist winters. Rainfall averages around eight inches per year. Besides open irrigation channels, there are no surface water features in the City.

The southern end of the San Joaquin Valley is occupied by the Tulare Lake Hydrologic Region, which includes all of Kings and Tulare counties and most of Kern and Fresno counties. Drainage in this area is completely internal and inflowing water is removed by evapotranspiration. All of the rivers in the region terminate on the San Joaquin Valley floor in lakes or sinks; water does not find its way to the ocean from the basin, as it once did under natural conditions, except in extremely wet years. Runoff in the Delano area travels in a northwesterly direction to the historic Tulare Lake bed.

Flood Hazards

Areas subject to periodic flooding are categorized as Zone A on the Flood Insurance Rate Maps (FIRM) produced by the Federal Emergency Management Agency (FEMA). Zone A identifies areas subject to inundation by a 100-year flood event; however, these are areas for which no detailed hydraulic analyses have been performed and no base flood elevation

or depths are shown. Currently, the FIRM map for the project area shows a 100-year flood zone covering part of the southern portion of the City of Delano.

PROJECT SITE SETTING

Drainage Pattern

The project site contains no natural drainage channels. An unlined stormwater detention basin is located on Parcel 9, south of the existing Pioneer Restaurant. This rectangular basin is approximately 50 by 60 feet and approximately 5,000 square feet in area. There was no water within the basin at the time of the field reconnaissance conducted for the Phase I Environmental Site Assessment. Under current conditions, stormwater runoff from the project site is minimal due to the fallow agricultural land that remains on the majority of the project site and the flat topography.

Flood Hazards

According to the FIRM map for the project vicinity dated September 29, 1986 (Community Panel 060075 0125 B), the project site is located within Zone A. This zone designates areas subject to inundation by a 100-year flood event. Zone A are areas for which no detailed hydraulic analyses have been performed and no base flood elevation or depths are shown.

3.8.2 REGULATORY SETTING

FEDERAL CLEAN WATER ACT

Water quality objectives for all waters in the State are established under applicable provisions of Section 303 of the Federal Clean Water Act (CWA) and the State Porter-Cologne Water Quality Control Act. The State Water Resources Control Board (SWRCB) and the Central Valley Regional Water Quality Control Board (RWQCB) are responsible for assuring implementation and compliance with the provisions of the CWA and the Porter-Cologne Water Quality Control Act.

Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. Section 304(a) requires the U.S. Environmental Protection Agency (EPA) to publish water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in the water.

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD

The California State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards have the authority in California to protect and enhance water

quality, both through their designation as the lead agencies in implementing the Section 319 non-point source program of the federal Clean Water Act and under the State's primary water-pollution control legislation, the Porter-Cologne Act. The Central Valley Regional Water Quality Control Board (RWQCB) guides and regulates water quality in streams and aquifers of the San Joaquin Valley region through designation of beneficial uses, establishment of water-quality objectives, administration of the National Pollutant Discharge Elimination System (NPDES) permit program for stormwater and construction site runoff and Section 401 water-quality certification where development results in infill of jurisdictional wetlands or waters of the U.S. under Section 404 of the Clean Water Act.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Pursuant to the 1987 Amendments to the CWA and 1991 regulations promulgated by the EPA, the SWRCB has adopted the National Pollutant Discharge Elimination System (NPDES) with three general permits for stormwater dischargers. One permit applies to industrial dischargers, another permit relates to construction activities and the third permit is a general permit for municipalities.

NPDES was established by the CWA to regulate municipal and industrial discharges to surface waters of the United States. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Section 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that EPA must consider in setting effluent limits for priority pollutants.

The purpose of the NPDES program is to establish a comprehensive stormwater quality program to manage urban stormwater and minimize pollution of the environment to the maximum extent practicable. The NPDES program consists of: 1) characterizing receiving water quality, 2) identifying harmful constituents, 3) targeting potential sources of pollutants, and 4) implementing a Comprehensive Stormwater Management Program.

The RWQCB is responsible for the issuance of NPDES permits under the CWA and on behalf of the SWRCB and the EPA for activities that could cause water quality impacts to surface waters and groundwater. Development of the project site would be required to comply with the permitting requirements in effect at the time of construction activities. The permit requires that the following general measures be implemented during construction activity:

- Eliminate or reduce non-stormwater discharges to stormwater systems and other waters of the U.S.;
- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP); and,

- Perform inspections of stormwater control structures and pollution prevention measures.

CALIFORNIA WATER CODE

California Water Code Section 231 requires the California Department of Water Resources (DWR) to develop well standards to protect California's groundwater quality. DWR Bulletin 74-90 (Supplement to Bulletin 74-81), *California Well Standards, Water Wells, Monitoring Wells, Cathodic Protection Wells* (1991) contains the minimum requirements for constructing, altering, maintaining and destroying these types of wells. The standards apply to all water well drillers in California and the local agencies that enforce them.

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

The Federal Emergency Management Agency (FEMA) publishes maps, called Flood Insurance Rate Maps (FIRMs). The purpose of a FIRM is to show the areas in the community that have a one percent or greater chance of flooding in any given year, known as Special Flood Hazard Areas (SFHAs). FIRMs are the result of engineering studies that are performed by engineering companies, other Federal agencies, or the community and are reviewed and approved by FEMA. As a participant in the National Flood Insurance Program (NFIP) special building requirements are applicable and defined in Title 44 CFR, Sections 59 through 65.

According to Title 44 CFR, Section 65.3, hydrologic and hydraulic data must be submitted to FEMA for a FIRM revision if the development changes existing Special Flood Hazard Areas. This must be completed no later than six months after such data becomes available. This data must be submitted through a Flood Map Revision Application process by requesting a Conditional Letter of Map Revision (CLOMR) or Letter of Map Revision (LOMR).

Conditional Letter of Map Revision

A Conditional Letter of Map Revision (CLOMR) is FEMA's formal review and comment as to whether or not a project complies with the minimum NFIP floodplain management criteria. If it is determined that it does, the CLOMR also describes any eventual revisions that will be made to the NFIP maps upon completion of the project.

A CLOMR is required only for those projects that will result in a one percent annual chance water surface elevation increase of greater than 1.00 foot for streams with base flood elevations specified, but no floodway designated, or any one percent annual chance water surface elevation increase for proposed construction within a regulatory floodway. Until a LOMR is issued, the property remains in the floodplain and is subject to the community floodplain management ordinance and the mandatory flood insurance purchase requirements.

Letter of Map Revision

When engineered earthen fill is authorized for placement in an SFHA to raise the surface of the ground to and/or above the base flood elevation, a request may be submitted to FEMA to revise the FIRM to indicate that the filled land is outside of the SFHA. When such revisions are warranted, FEMA usually revises the FIRM by issuing a LOMR. After FEMA has revised the FIRM to show that the filled land is outside the SFHA, the community is no longer required to apply the minimum NFIP floodplain management standards to any structures built on the land and the mandatory flood insurance purchase requirements no longer apply.

CITY OF DELANO GENERAL PLAN AND ORDINANCES

Construction and maintenance of public services and utilities in the City of Delano is enabled and regulated by the *City of Delano General Plan* (City of Delano 2005) and Municipal Ordinances. The following policies from the *City of Delano General Plan* are relevant regarding hydrology impacts of the proposed project:

Public Facility Policies

Policy 7 Design stormwater runoff drainage structures to decrease erosion.

Policy 8 Development in floodway areas shall be in accordance with regulations of the Federal Emergency Management Agency (FEMA).

Policy 10 Developers shall construct all tributary facilities necessary to connect major facilities, whether or not the major facilities have yet been constructed.

Policy 11 Temporary drainage facilities such as ponding basins may be constructed by the developer if the major facilities are not available, subject to City determination and approval. The developer will also be required to pay all applicable drainage fees in addition to constructing temporary facilities at his own cost.

Policy 12 Temporary drainage facilities such as retention basins shall be dedicated to the City. If the basin is abandoned within ten years, the property would revert to the original owner, subject to redevelopment of the site in a manner satisfactory to the City.

Policy 14 To encourage groundwater recharge, ponding basins shall be designed as retention basins. However, pumping facilities shall be included in such facilities to handle peak flows and to provide for

disposal of stormwater into irrigation ditches when necessary. Stormwater inflow into irrigation district canals and pipelines shall be subject to existing or future agreements by and between the City and the irrigation districts specifying maximum inflow, maximum service area boundary and any other limitation thereto.

Safety Element Policies

Policy 2 Protect community residents from the hazards of flooding. In areas deemed by the Federal Emergency Management Agency (FEMA) or the City Engineer as being within the 100-year flood zone, all proposed development must implement appropriate protective measures. These measures, subject to the approval by the City Engineer, shall not adversely affect drainage of surrounding properties, and shall not increase the flood potential in the area. One of the protective measures shall include a provision that the construction pad of the project shall be not less than one foot above flood elevation.

3.8.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on CEQA Guidelines and generally accepted standards for environmental documents prepared pursuant to CEQA and standards utilized by the City of Delano. An impact to surface hydrology or water quality is considered significant if implementation of the proposed project will result in any of the following:

1) 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 that would result in, or contribute to, flooding on- or off-site;

2) 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;

3) Significantly degrade surface water quality due to erosion, urban runoff, on-site sewage treatment and disposal system, or other factors, as a result of either construction activities or daily operation;

4) Expose people or structures to flood hazards as a result of development 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, or place within a 100-year flood hazard area structures which would impede or redirect flood flows;

5) 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;

6) Inundation by seiche, tsunami, or mudflow; or,

7) Contributes significantly to any cumulative hydrology or water quality impact.

METHODOLOGY

This hydrology and water quality analysis is primarily based on review of the drainage plan prepared by Landmark Surveying & Engineering (2005) as well as information provided by the City of Delano.

PROJECT IMPACTS AND MITIGATION MEASURES

Increased Stormwater Runoff

Impact 3.8-1 Development of the proposed stormwater drainage system may create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. This is considered a **potentially significant** impact.

Implementation of the proposed project would result in the eventual conversion of the 45-acre site from fallow agricultural land, former rural residential and limited commercial uses to a regional commercial shopping center with over 2,000 parking spaces. The proposed project would result in the coverage of the majority of the project site with impervious surfaces, such as pavement, roofing and walkways, and would therefore increase stormwater runoff from the project site, altering existing drainage patterns. According to calculations performed by Landmark Surveying & Engineering, peak runoff rates for the 5-year storm event would be 48.34 cubic feet per second (cfs), the 10-year design storm equals 56.01 cfs and the 100-year event would be 89.24 cfs. (For detailed runoff calculations, refer to the Preliminary Stormwater Drainage Study contained in Appendix G).

Stormwater drainage from the proposed project will be directed to three catch basins located on the south side of Woollomes Avenue. A proposed new storm drain line, with pipe sizes ranging from 24 to 42-inches would convey stormwater flows westward to Stradley Avenue. This new line will intercept a planned and funded 72-inch line, which will empty into an existing, unlined stormwater retention basin with a capacity of

approximately 100 acre-feet, owned by the City of Delano. In addition, the proposed project would install a 21-inch storm drain line within the proposed Dover Parkway.

The City of Delano uses storm basin design criteria contained in the Kern County Hydrology Manual. This criterion requires one acre-foot of retention for every eight acres of developed commercial land. Therefore, the proposed project would be required to provide approximately 5.5 acre-feet of basin capacity. According to calculations performed by Landmark Surveying & Engineering, the project applicant would be required to expand the City's existing stormwater basin in order to accommodate stormwater flows generated by the proposed project. An area of approximately 700 feet by 15 feet by 12 feet deep would need to be excavated from the easterly side of the City's existing stormwater retention basin to accommodate stormwater runoff from the project site. In order to adequately drain stormwater runoff, the proposed project includes adding approximately 125,000 cubic yards of this soil in order to raise the elevation of the project site above the base flood elevation, as discussed below under Impact 3.8-4. The fill will be obtained from the City's stormwater retention basin located at the southwest corner of the intersection of South Albany and Woollomes Avenue. All stormwater drainage plans and design calculations will be subject to review and approval by the City of Delano.

According to the City, expansion is feasible at this basin and could be accommodated at the City-owned stormwater retention pond (Personal Communication with John Wankum, City Engineer, on October 19, 2005). In addition, storm drainage impact fees will be assessed to cover the cost of infrastructure improvements necessary to serve the project site. Ordinance No. 928 amended the City of Delano Municipal Code to allow impact fees to be established by resolution. Resolution No. 2004-97 adopted the current impact fee structure, which includes storm drainage facilities fees of $5,017 per gross development acre for commercial uses. If the proposed improvements are performed in accordance with City standards and runoff from the proposed project is not accommodated in the City's off-site retention basin, this would be considered a **potentially significant impact**. The following mitigation measure would reduce this impact to a less than significant level.

Mitigation Measure

MM 3.8-1 Subject to review and approval by the City of Delano, the project applicant shall expand the City of Delano's existing off-site retention basin 700 feet by approximately 15 feet by 12 feet deep from the easterly side of the retention basin to accommodate stormwater runoff generated by the proposed project prior approval of a grading permit. The soil excavated from the retention basin shall be used at the project site to raise the base flood elevation (BFE) by one foot above the BFE adopted by FEMA. The stormwater drainage plans and design calculations shall be subject to review and approval by the City of Delano.

Implementation of the above mitigation measure will reduce stormwater drainage system impacts to a **less than significant** level by requiring that the stormwater infrastructure and the City owned retention basin is designed to accommodate the proposed project.

Construction-Related Impacts to Water Quality

Impact 3.8-2 Soil disturbance associated with site preparation, grading and construction activities resulting from the proposed project may cause soil erosion and sedimentation, and/or the release of other pollutants into adjacent waterways. This is considered a **potentially significant** impact.

Delivery, handling and storage of construction materials and wastes, as well as use of construction equipment on-site during the construction phase of the project, will introduce a risk for stormwater contamination that could negatively impact water quality. Refueling and the parking of construction equipment and other vehicles on-site during construction may result in spills of oil, grease or related pollutants that may discharge into on-site drainages. Improper handling, storage or disposal of fuels and materials or improper cleaning of machinery could also cause water quality degradation. Gross pollutants such as trash, debris, and organic matter are additional potential pollutants associated with the construction phase of the project. Potential impacts include health hazards and aquatic ecosystem damage associated with bacteria, viruses and vectors, which can be harbored by pollutants.

Development of the proposed project would involve construction activities on the entire 45-acre site, such as site clearing, mass grading, excavation and trenching, which can adversely affect water quality by increasing soil erosion rates in the area of the proposed project. The exposure of raw soil to the natural elements (e.g. wind, rain) during grading operations may impact surface runoff by increasing the amount of silt and debris carried by stormwater runoff. Implementation of the following mitigation measure would reduce impacts to water quality during construction to a **less than significant** level.

Mitigation Measure

MM 3.8-2 In accordance with RWQCB regulations, development resulting in grading or excavation that disturbs one acre or more shall require the applicant to obtain a General Permit for Stormwater Discharges Associated with Construction Activities, as required by the National Pollution Discharge Elimination System (NPDES). Coverage under this permit requires the applicant to file a Notice of Intent (NOI) with the State through the RWQCB and prepare a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must list Best Management Practices (BMP), which specify how the discharger will protect water quality during the course of construction. The SWPPP shall be consistent with RWQCB standards.

The SWPPP will detail the treatment measures and BMPs to control pollutants that would be implemented during the construction and post-construction phases of project development. As part of the SWPPP, an Erosion and Sedimentation Control Plan shall be prepared for the proposed project prior to grading. The erosion and sediment control plan shall demonstrate how the proposed project would effectively minimize soil erosion and sedimentation from the project site and must also provide for the control of runoff from the site. The erosion control plan for the project might include such components as designation of restricted-entry zones, sediment tracking control practices, diversion of runoff away from disturbed areas, protective measures for sensitive areas, outlet protection and provision for revegetation or mulching for soil stabilization. The plan would also prescribe treatment measures to trap sediment once it has been mobilized, at a scale and density appropriate to the size and slope of the catch basins. These measures typically include inlet protection, straw bale barriers, straw mulching, straw wattles, silt fencing, check dams, terracing and siltation or sediment ponds.

In addition to the erosion and sediment-control measures, the SWPPP shall include construction-phase housekeeping measures for control of contaminants such as petroleum products, paints and solvents, detergents, fertilizers, and pesticides, as well as vehicle and equipment fueling and maintenance practices, and waste management and disposal control practices, among other things. The SWPPP will also set forth the BMP monitoring and maintenance schedule and responsible entities during the construction and post-construction phases. Implementation of the above mitigation measure will reduce the impact to a **less than significant** level by requiring the project applicant to obtain a NPDES permit for construction activities, which must include measures to reduce impacts to water quality that occur during project construction.

Urban Non-point Source Pollution

Impact 3.8-3 The proposed project would generate urban non-point contaminants, which would be carried in stormwater runoff from the project site and ultimately affect groundwater quality. This is considered a **potentially significant** impact.

Once the project buildings and parking lots have been constructed and the landscaping is installed, typical urban runoff contaminants would include: petroleum products, heavy metals, and sediments from vehicles; pesticides, fertilizers and plant debris from landscaped areas; and litter. These pollutants would be flushed by stormwater runoff and enter a proposed filtering system that connects to the storm drainage system and ultimately accumulate in an off-site retention basin where they would contribute to cumulative non-point contaminant loads and result in incremental deterioration of groundwater quality, which is considered a **significant impact**. Implementation of the following mitigation measure would reduce this impact to a less than significant level.

Mitigation Measure

MM 3.8-3 The proposed project shall include the following post-construction Best Management Practices (BMPs) in order to reduce non-point source pollutant loads:

- The project applicant shall comply with all applicable federal, state and local laws and regulations during the operational phase of the project regarding non-point source discharges and obtain all necessary permits or approvals that may be required;
- Impervious surfaces such as roads, parking lots and driveways shall be routinely cleaned during both the "wet" and "dry" seasons to limit the accumulation of "first flush" contaminants;
- Engineered products, such as storm drain inlet filters, oil/water separators, etc., shall be utilized to capture pollutants before the stormwater runoff enters the storm drainage system;
- Storm drain inlets shall be labeled with the phrase "No dumping," or a similar phrase to discourage illegal discharges of pollutants to the storm drainage system;
- Common landscaped areas shall be subject to a program of efficient irrigation and proper maintenance including minimizing use of fertilizer, herbicides and pesticides;
- The project tenants and users shall implement a trash management and litter control program to mitigate the impacts of gross pollutants on stormwater quality. This program shall include litter patrol, emptying trash receptacles in common areas, and reporting and investigating trash disposal violations;
- Restaurants within the development shall be designed to include contained areas for cleaning mats, containers and sinks connected to the sanitary sewers. Grease shall be collected and stored in a contained area and shall be removed regularly by a disposal recycling service. To this end, sinks shall be equipped with grease traps to provide for its collection.

The portion of the project SWPPP that addresses post-construction practices shall itemize these and any additional pollution control measures required for the proposed project. Implementation of the above mitigation measure will reduce the impact to a **less than**

significant level by requiring the project to incorporate BMPs in order to reduce non-point source pollutant loads.

Flood Hazards

Impact 3.8-4 According to the Flood Insurance Rate Map (FIRM) for the proposed project, the majority of the project site was designated as being within Zone A, which is considered an area where no detailed hydraulic analyses has been performed and no base flood elevation or depths have been determined. However, based on a Base Flood Elevation Study prepared for the proposed project, the Base Flood Elevation of the project site was determined to be 299.28 feet with a majority of the project site located within Zone C with a small portion of the southwest corner is located within Zone B. This is considered a **potentially significant impact.**

According to the Flood Insurance Rate Map (FIRM) for the proposed project vicinity dated September 29, 1986 (Community Panel 060075 0125 B), the majority of the project site is located within Zone A. This Special Flood Hazard Area (SFHA) is subject to inundation by a 100-year flood event. However, these are areas for which no detailed hydraulic analyses have been performed and no base flood elevation or depths are shown. Therefore, a flood evaluation of the flooding sources and their effects on the base flood elevation (BFE) for the project site was prepared by Lusich Company, Inc. in December 2006. The flood evaluation study is included as Appendix G of the RDEIR, however due the size, the appendices to the study are available for review at the City of Delano Community Development and Planning Department located at 1015 11th Avenue, Delano, CA 93216.

Figure 3.8-1, Proposed Flood Limits, shows the proposed flood zone limits based on the flood evaluation prepared by Lusich Company, Inc. The area designated as Zone A would be subject to inundation of flood waters to a depth greater than 0.5 feet during a 100-year storm event. The area designated as Zone B would be inundated to a depth of less than 0.5 feet during a 100-year storm event. The area designated as Zone C would not be flooded during a 100-year storm event but would be subject to flooding from a 500-year storm event. According to Lusich Company, Inc., a majority of the project site lies within Zone C with a small portion of the southwest corner is located within Zone B, as shown in **Figure 3.8-1, Proposed Flood Limits**. The base flood elevation (BFE) at the project site was determined to be 299.28 feet. Since the project site is currently designated by the Flood Insurance Rate Map as being within Zone A, the following mitigation measure would ensure that prior to recordation of the final map that the project applicant obtain a Letter of Map Revision (LOMR) to ensure that development does not proceed within Zone A, which would be considered a **potentially significant impact.**

Mitigation Measure

MM 3.8-4 Prior to recordation of a final map, or otherwise determined by the City of Delano, for onsite areas currently within Zone A, the project applicant is required to obtain a Letter of Map Revision (LOMR) from the Federal Emergency Management Agency (FEMA). The LOMR shall identify the area of the proposed development that has been removed from the "Zone A" FEMA designation and shall be submitted to the City of Delano.

With submittal of a Letter of Map Revision (LOMR) that is required to be approved by FEMA to adopt this base flood elevation, the project site will not lie within a 100-year flood Zone. In addition, implementation of mitigation measure **MM 3.8-1** would ensure that stormwater generated on the project site is captured and conveyed to the City of Delano's stormwater retention basin to reduce the potential for on-site flooding. Therefore, the exposure to flood hazards would be reduced to a **less than significant** level. No mitigation measures are necessary.

Exposure of People or Structures to Risk of Loss, Injury, or Death Involving Flooding as a Result of the Failure of a Dam

The project site is located approximately 50 miles southeast of Lake Isabella Dam and would not be subject to inundation should Lake Isabella Dam fail. Therefore the proposed project would have no impact with respect to the exposure of people or structures as a result of a failure of a dam.

Inundation by Seiche, Tsunami, or Mudflow

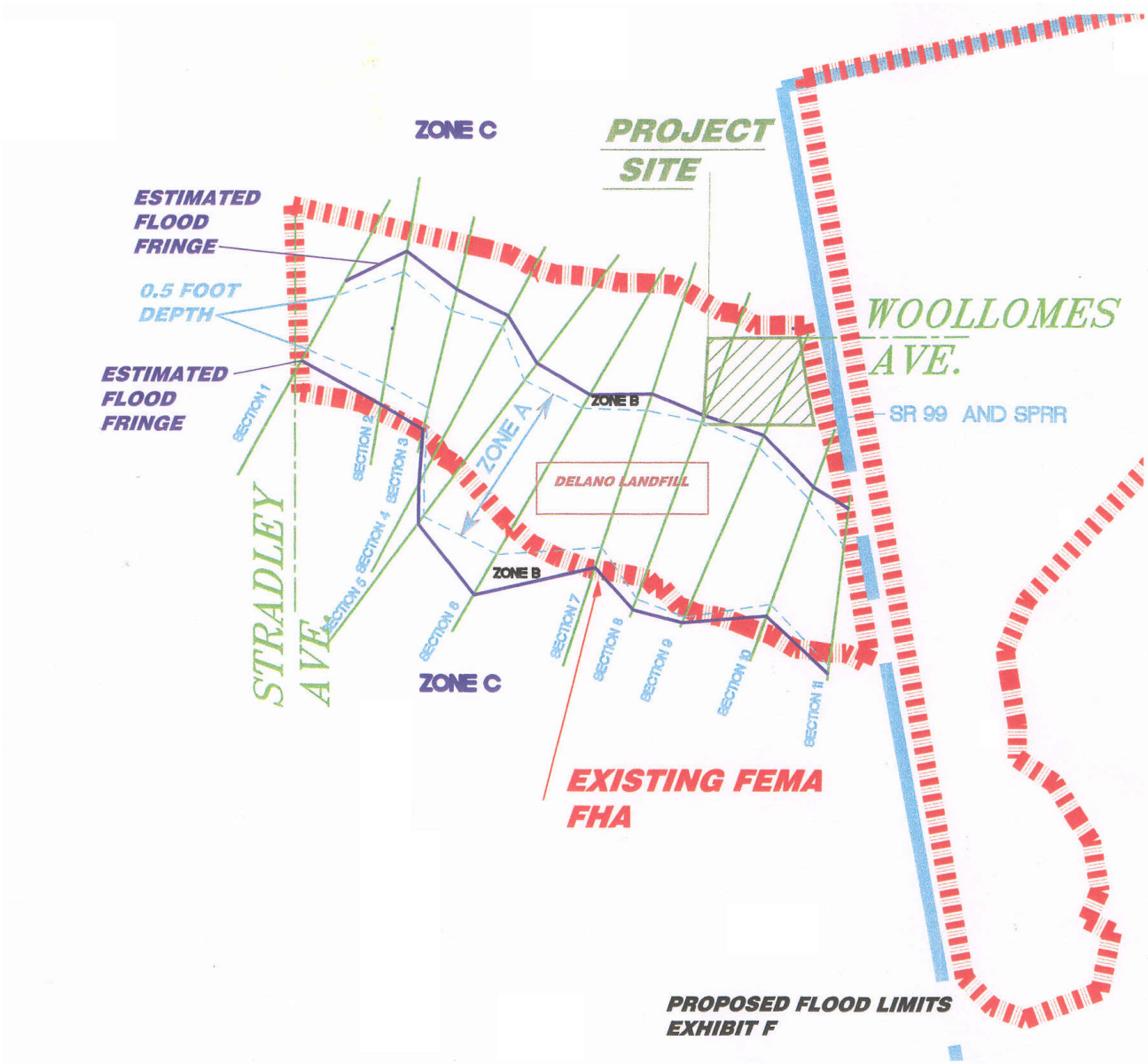
Seiches and tsumanis are the result of waves of bodies of water created by earthquakes. A tsunami is not likely to affect the project site as the nearest point of the Pacific Ocean is approximately 130 miles away. It is unlikely that seiches would cause an impact on the proposed project since there are no large water bodies in the vicinity of the project site. Since the project site is relatively flat, no mudflow impacts on the proposed project would occur. Therefore, inundation caused by seiche, tsunami, or mudflow is considered less than significant.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Surface Water Runoff and Contamination

Impact 3.8-5 The proposed project in combination with future development in the area may cause a cumulative effect with regard to drainage and water quality. This cumulative impact is considered **less than significant**.

Development of the project site would contribute to cumulative drainage flows and surface water quality impacts when combined with future growth and development in the project vicinity. However, the City of Delano requires that new development mitigate storm drainage impacts through the construction of retention basins with adequate capacity to handle projected flows generated by each development, as determined by the City. The proposed project will also be subject to requirements of the RWQCB regarding short-term and long-term water quality impacts. The application of these standards and practices at proposed development sites would result in a minimization of the combined impact. Therefore, the cumulative stormwater runoff and contamination impact is considered **less than significant**.



0 750 1500
SCALE IN FEET
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FIGURE 3.8-1
PROPOSED FLOOD LIMITS

PMC

T:\Delano, City of\Delano Plaza\Graphic Development\Illustrator Files\Figure 3.8-1.ai, December 2006

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Section 3.9
Land Use Planning

This section of the RDEIR describes the existing land uses of the project site, characterizes surrounding land uses, and evaluates the consistency of the proposed project with the *City of Delano General Plan* and any other applicable plans or documents. Potential impacts focus on compatibility of the proposed project with adopted environmental plans and policies, compatibility of future commercial areas with surrounding land uses and the conversion of land to urban uses. This examination is based on the *City of Delano General Plan* (City of Delano 2005), the *Delano Zoning Ordinance*, and additional information provided by the City of Delano. A revised *Economic Impact Study* prepared by Applied Development Economics (ADE) in April 2007 evaluates the potential for urban decay due to secondary economic impacts with implementation of the proposed project. The economic impact study is included as Appendix G of this RDEIR.

3.9.1 EXISTING SETTING

REGIONAL SETTING

The project site is located in the City of Delano, in northern Kern County. Delano is located along State Route 99, approximately thirty miles northwest of Bakersfield and seventy-eight miles southeast of Fresno. The City is located in the southern portion of California's agriculturally rich San Joaquin Valley, ten miles from the western foothills of the Sierra Nevada Mountains and approximately twenty five miles from the Coast Range to the west.

SITE SETTING AND EXISTING USES

The project site is located in the southern part of the City of Delano at the southwest corner of the Woollomes Avenue and Garzoli Avenue intersection, near the Woollomes Avenue interchange with State Route 99. The project site consists of fallow agricultural land, former rural residential uses and limited commercial uses. According to the project applicant, all structures have been demolished or are in the process of being demolished. Demolition permits were obtained from the City of Delano prior to demolition and waste materials were disposed of following all local, state and federal regulations. Prior to demolition, the project site included five rural residences along Woollomes Avenue; a two-story motel and paved parking lot at the northeastern corner of the project site; a pallet company on the southern portion of the project site; and a vacant commercial structure within a fenced area (formerly a wrecking yard) near the center of the project site. There is a depressed area in the northwestern portion of the project site that appears to be associated with soil borrowing. A rectangular flood control basin of approximately 5,000 square feet exists in the northeastern portion of the project site.

SURROUNDING LAND USES

The project site is located on the edge of the Delano City limits. Adjacent land uses include a Home Depot home improvement store located across Woollomes Avenue north of the project site; commercial properties, including an auto and truck stop and a tractor sales and service company (located between Garzoli Avenue and State Route 99 east of the project site); and fallow agricultural land located south and west of the project site within the City's Sphere of Influence. The project site partially surrounds the Pioneer Restaurant, located near the northeast corner of the project site. The restaurant is not part of the project area. Surrounding land uses are shown in **Figure 2-7, Surrounding Land Uses**.

The closed McFarland-Delano Landfill can also be seen approximately 700 feet southwest of the project site. The Delano Municipal Airport is located approximately ½-mile east of the project site.

ECONOMIC PROFILE OF THE DELANO RETAIL SECTOR

The City of Delano generates approximately $315 million of retail sales annually. The largest concentrations of retail sales occur in general merchandise stores, food stores, restaurants/eating places, home improvement, and motor vehicle dealerships. Together, these major categories account for over half of the City of Delano's total retail sales. Delano motor vehicle dealerships (new and used cars, and other vehicles) earn about $62 million of sales, and are the largest earner of sales tax revenues for the City. Grocery stores and supermarkets earn another $57 million of total sales. The most prominent grocery stores in the City of Delano are the Ranch Market and Save Mart supermarkets.

Restaurants and fast food establishments generate $37 million in retail sales, while discount/department stores and other general merchandise stores generate about $34 million in sales. The general merchandise category in the City of Delano is largely dominated by the downtown J.C.Penney store and K-Mart location at County Line Road. In addition, gasoline service stations contribute about $27 million of annual sales, taking advantage of the community's location adjacent to State Route 99 (ADE 2007).

Delano Shopping Centers and Retail District

The City of Delano has several existing shopping centers and retail districts, including the Central Business District, Delano Village Center, Randolph Village Center, and Cecil Plaza Shopping Center. These shopping centers have been maintained as ongoing retail spaces, and while some of the buildings have been minimally maintained, they do not currently exhibit signs of urban decay. The Central Business District in particular has had a lot of reinvestment in recent years with the construction of streetscape improvements and some storefronts undergoing recent renovations.

With respect to existing vacancies, a walking survey of commercial areas in the City of Delano was performed by ADE in late Fall of 2006 and found indications of a strong retail market. In the Central Business District, a total of 165 store fronts along Main Street and Jefferson Street were observed, as well as on cross streets of 6th, 7th, 8th, 9th, 10th and 11th Avenue. Of the 165 storefronts, nine were vacant. Therefore, there is a somewhat low vacancy rate of five percent, suggesting a healthy demand for space in the City's core, particularly by entrepreneurs seeking to serve the area's ethnic communities.

In addition, the majority of the storefronts at the Randolph Village Shopping Center are vacant due to ongoing renovation work in conjunction with the recent opening of the Vallerta Supermarket. The only large vacancies that currently exist in the City of Delano include the bowling alley and the former K-Mart location, which became vacant after K-Mart moved its store to a different location within the City of Delano. Neither of these buildings show significant signs of physical deterioration or abandonment, and according to the City, both sites have attracted interest from potential tenants and developers.

The City of Delano has several business retention and expansion programs already in place. These programs include an Enterprise Zone that provides tax credits, accelerated depreciation and other fiscal incentives; a Redevelopment Agency-sponsored façade improvement program that provides up to $10,000 for exterior renovations; and a small business loan program. In addition, the City has invested in the Central Business District by funding streetscape improvements.

Downtown Delano (Central Business District)

The Delano Central Business District (CBD) has approximately 206 business establishments, of which about 96 establishments are retail stores, restaurants, or personal services establishments. Even though the majority of these businesses are small-scale, Delano's J.C. Penney store and the Ranch Market grocery store are both located along Main Street and attract shoppers from outside of Delano.

In recent years, the mix of CBD retail establishments has been changing as long-time business establishments have left and been replaced by smaller "99 cent" variety stores and other bargain stores. This has made it difficult for established businesses that attract a mix of incomes to remain in the CBD, as many CBD businesses focus on serving the low-income shopper. The economic health of the CBD retail establishments is summarized below.

- *Apparel stores*. Approximately 64 percent of all apparel store sales are in the CBD.
- *Specialty Retail Stores*. Specialty retail stores in the CBD account for about 75 percent of the total sales in this category citywide. Sales among CBD gift, sporting goods, photo,

music, books, office supplies, and jewelry stores range between 70 and 100 percent of all Delano's specialty retail store sales.

- *Food Stores and General Merchandise*. The City of Delano's downtown food and general merchandise stores, which include department stores, variety stores, grocery stores, and eating places account for 22 percent of all store sales in the City. This category includes J.C. Penney and Ranch Market.
- *Building Materials and Home Furnishings Stores*. Establishments in the Central Business District account for only 10 percent of the citywide sales in this category. The balance has shifted due to the dominance of Home Depot in this category.
- *Automotive retailers*. Lastly, automobile oriented retailers also have a presence in the Central Business District. This category includes gas stations, auto parts stores, and auto dealerships. Establishments located in the CBD account for approximately 25 percent of the citywide sales total in this category.

3.9.2 REGULATORY SETTING

The purpose of this section is to evaluate the proposed project for land use consistency with relevant adopted plans and policies including the *City of Delano General Plan* (2005) and the *City of Delano Zoning Ordinance*. The General Plan is a statement of community goals, policies and implementation programs that guide the growth and development of the City.

CITY OF DELANO LAND USE POLICY

City of Delano General Plan

The City of Delano uses the General Plan, Zoning Ordinance and permit process to regulate land development within the City's incorporated boundaries. Within the General Plan, the Land Use Element is the primary document used by the City to provide guidance for future development.

The majority of the project site is designated as "Commercial" in the *City of Delano General Plan* (2005). The northeast corner is designated as "Service Commercial" and the southeast corner as "Industrial." The majority of the site is zoned "CRC" (Community Retail Commercial) with a small portion zoned as "GC" (General Commercial) in the northeast corner, adjacent to the intersection of Woollomes Avenue and Garzoli Avenue. The project site is also located within the City's Redevelopment Zone.

The following policies from the Land Use Element of the *City of Delano General Plan* are relevant to the proposed project.

General Plan, Zoning Consistency and Plan Administration

Objective A: Establish a well-balanced mix of residential, commercial, industrial, and open space/public land uses which will create and maintain a high quality environment and a fiscally sound community.

Policy 1 New development shall be consistent with the adopted land use map and policies of the General Plan.

Policy 2 All development shall conform to the land use density and intensity standards depicted in the General Plan.

Commercial Land Use

Objective A: Ensure the provision of adequate commercial shopping opportunities and office space locations to meet anticipated needs.

Policy 1 Establish the following commercial land use designations: a) Commercial - The Commercial land use designation also provides for the development of 10-acre or larger cluster of commercial establishments serving needs similar to the neighborhood commercial centers, but serving larger areas. These community commercial areas are intended to be clustered along State Route 99 and along arterial roadways within the community. The community commercial center generally serves a market area as large as ten miles, depending upon the specific uses. Such facilities should be located along State Route 99, with the center providing supermarkets within each residential quadrant of the community to minimize cross-town traffic. b) General Service Commercial - This designation provides for commercial areas with a wide range of retail and service activities along major traffic corridors.

Policy 3 Community Commercial, in areas of 10 acres and larger, should be located along major traffic ways in consolidated centers that utilize common access and parking for commercial uses. Strip commercial uses are to be discouraged. Adequate pedestrian links to residential areas shall be required. New centers are proposed for Woollomes Avenue/State Route 99 and at Garces Highway and Browning Road. While adequate land needs to be reserved for community commercial use, care needs to be taken not to provide more commercial land than can reasonably be developed.

Policy 6 Commercial and office site planning shall be compatible with the surrounding neighborhood, signage, and landscaping.

Public and Institutional Land Use

Objective C: Ensure that land uses in the vicinity of the airport are compatible with airport operations.

Policy 1 Land use intensity and use shall be in accordance with City of Delano Airport compatibility criteria indicated on Table 2-2 for the zones indicated on Figure 3-5.

The following policies from the Economic Development Element of the *City of Delano General Plan* are relevant to the proposed project.

Objective A: The promotion and facilitation of economic diversification to encourage the creation of employment opportunities, increase revenue through the local economy and decrease dependency upon any one sector of the economy.

Policy 1 Target specific industries compatible with the community and labor force for recruitment, including industries that can provide employment for local residents, generate sales tax income directly or indirectly, and can be developed in a manner that fits in with the residential nature of the community.

Policy 2 Enhance the community's role as the regional commercial and industrial center for both northern Kern County and southern Tulare County.

Policy 3 Develop and implement a marketing and promotion plan focused on maintaining a positive business climate in the city.

Policy 6 Encourage new and continuing economic growth at specific geographic sites within the city, including but not limited to: the downtown area; Block H (the Delano Redevelopment Agency's 16-acre project); Industrial Parks; and the State Route 99 interchange at Woollomes Avenue.

Policy 7 Attract, expand and retain businesses within the City limits.

Policy 9 Develop State Route 99 as an integral corridor through the community, emphasizing land uses and architectural designs that portray an economically successful community.

Policy 11 Capture transient dollars flowing along the State Route 99 corridor to the greatest extent possible by providing lands for and encouraging the development of highway-oriented commercial use and large-scale retail uses serving Delano and surrounding areas.

City of Delano Zoning Ordinance

The majority of the site is zoned "CRC" (Community Retail Commercial) with a small portion zoned as "GC" (General Commercial) in the northeast corner, adjacent to the intersection of Woollomes Avenue and Garzoli Avenue

As set forth in Chapter 20.5.20 of the *City of Delano Zoning Ordinance*, the "GC" district "is to provide sites for commercial uses that will serve a large segment of the population with a wide variety of retail, wholesale, service, and office uses." Uses permitted in this district include, but are not limited to department stores, drug stores, clothing stores, banks, furniture stores, appliance stores, barber shops, beauty shops, book stores, hardware stores, variety stores, food stores and supermarkets, offices, restaurants, service stations and other retail sales and services of a similar character. Nurseries and garden supply stores are permitted (provided all equipment and supplies are kept within a building or fenced enclosed area) and outdoor hardware and home improvement uses are permitted subject to approval of a Conditional Use Permit application.

Chapter 20.6.20 lists the purpose of the "CRC" district as "to provide appropriate regulations and suitable locations for light industrial, research and development, warehouse and distribution office based firms seeking pleasant and attractive working environments, business support services and commercial uses requiring large parcels." Uses permitted in this district include all uses either permitted or conditionally permitted in commercial districts. Nurseries and garden supply stores are permitted (provided all equipment and supplies are kept within a building or fenced enclosed area) and outdoor hardware and home improvement uses are permitted subject to submittal and approval of a Conditional Use Permit application.

Chapter 7.32, Property Maintenance and Chapter 9.26 of the City of Delano Municipal Code

Chapter 7.32, Property Maintenance of the City of Delano Municipal Code outlines specific property maintenance standards for any person owning, leasing, occupying of having charge or possession of property in the City. These standards restrict unfinished construction, objectionable aesthetics and/or unsafe conditions considered to be "public nuisance" that may exist within the City. These regulations are set in place to deter trespass, malicious mischief, physical harm, and visual annoyance.

According to the City's Municipal Code, the City considers the following conditions to be of "public nuisance:" unfinished construction left for a period of one year or more; broken windows constituting a hazardous condition and facilitating trespass or malicious mischief or constituting shelter for the homeless; deteriorated or dis-repaired building exteriors, walls, driveways, fences, walkways or sidewalks in such a condition of deterioration or disrepair as to be unsafe or which is so defected as to substantially detract from the appearance of the immediate neighborhood; abandoned or neglected equipment, ponds, pools, or excavations; visible lumber, trash, salvage materials, or junk located on residential property; abandoned furniture and appliances; or dirt fill containing concrete, asphalt, or rubbish, or fill that is brought to or from the property that is not in compliance with the Uniform Building Code. Any of the above conditions shall be considered by the City to be in violation of Chapter 7.32, Property Maintenance of the City's Municipal Code. Enforcement procedures include: serving notice to the property owner or occupant; holding a public hearing to assess abatement and removal of the "public nuisance"; and abatement and removal of the public nuisance. If the property owner or occupant fails to respond or cooperate with City procedures, City representatives may proceed with abatement and removal of the nuisance at the expense of the property owner or occupant. Penalties may include abatement and removal costs, fines, and/or incarceration.

Graffiti is also considered an unlawful "public nuisance" in Chapter 9.26, Graffiti of the City's Municipal Code. In accordance with the provisions of Chapter 9.26, if graffiti has been identified by City, notice is given to the responsible person or property owner and the graffiti must be removed within ten days of notice. If the responsible person or property owner does not have the financial ability to remove the graffiti, the City manager can authorize the use of City funds under the Graffiti Removal and Prevention Program. According to Chapter 9.26, Graffiti of the City's Municipal Code, if the responsible person or property owner refuses or fails to remove graffiti, a City agent or representative will abate and remove the graffiti at the expense of the responsible person or property owner. If costs are not reimbursed to the City by the responsible person or property owner, the City may take action through small claims court or by placing a lien against the property, pursuant to applicable articles of the City's Municipal Code.

Design Review

The design review process in Delano is conducted by the Project Review Committee (PRC), which is authorized to approve or deny applications and to impose reasonable conditions upon such approval. Conditions may include, but are not limited to, requirements for open space; screening and buffering of adjacent properties, fences and walls, landscaping, installation and maintenance of landscaping and erosion control measures, vehicular ingress and egress, traffic circulation, signs, grading requirements, establishment of development schedules or time limits for performance or completion of improvements, and such other conditions as the PRC may deem necessary.

3.9.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on CEQA Guidelines and other performance standards recognized by the City of Delano. For the purposes of this RDEIR, impacts are considered significant if the following would result from implementation of the proposed project:

1) Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project;

2) Physically divide or disrupt an established community;

3) Conflict with any applicable habitat conservation plan or natural community conservation plan;

4) Create incompatibility with surrounding uses;

5) Result in secondary economic impacts which creates substantial physical deterioration or urban decay; and/or

6) Contribute significantly to any cumulative land use impact.

METHODOLOGY

The evaluation of potential land use impacts is based on site reconnaissance, the *City of Delano General Plan* (2005), the *City of Delano Zoning Ordinance*, the applicant's project description, and application materials. An evaluation of urban decay due to secondary economic impacts associated with the proposed project is based on a revised *Economic Impact Study* prepared by ADE in April 2007, which is included in Appendix G of this RDEIR.

PROJECT IMPACTS AND MITIGATION MEASURES

Consistency with General Plan and Zoning Ordinance

Impact 3.9-1 The proposed project is consistent with the provisions of the *City of Delano General Plan* and the *City of Delano Zoning Ordinance*. This is considered a **less than significant impact.**

The proposed project includes applications for a tentative parcel map, conditional use permits, and architecture and site plan review to establish a precise development plan for a 456,022 square foot regional shopping center on a 45-acre site.

The majority of the project site is zoned "CRC" (Community Retail Commercial), with Parcels #8 and #9 zoned "GC" (General Commercial). One of the primary purposes of the "CRC" district is to provide suitable locations for commercial uses requiring large parcels. The primary purpose of the "GC" district is to provide sites for commercial uses that will serve a large segment of the population with a wide variety of retail, wholesale, service and office uses. According to these zoning guidelines, the proposed project would be consistent with the allowed uses for these two zoning districts. Although the southeastern portion of the project site has an "Industrial" land use designation, according to Chapter 20.2 of the *Zoning Ordinance*, the zoning designation of "CRC" is consistent with this land use designation.

Many uses within the "CRC" and "GC" districts are only allowable with a Conditional Use Permit (CUP). These include uses that may be part of the proposed project such as: automotive (paint and body), automobile repair, building sales/outdoor storage; convenience stores (including alcohol sales), drive-in/through businesses (including restaurants), hardware stores (outdoor storage), home improvement (outdoor), restaurants other than fast food serving alcoholic beverages, service stations with a convenience store, theaters, and tire sales and service. The proposed garden centers would not require a CUP, provided all equipment and supplies are kept within a building or fenced, enclosed area. Impacts related to potential uses being in conflict with existing zoning regulations would be **less than significant** upon submittal and approval of appropriate Conditional Use Permits.

The proposed project is consistent with the *City of Delano General Plan* for the designated land use of "Commercial," which provides for a 10-acre or larger cluster of commercial establishments serving needs similar to neighborhood commercial centers, but also includes grocery, drug, general merchandise, variety and specialty stores. The proposed project is also consistent with the "Service Commercial" designation, which provides for commercial areas with a wide range of retail and service activities along major traffic corridors. The proposed project would be subject to design review, which will ensure that the proposed project meets the General Plan goals and policies for high quality commercial development.

Throughout the RDEIR, the applicable General Plan goals and policies are listed in each of the individual topic areas. With the implementation of mitigation measures identified within this EIR, the proposed project would be consistent with applicable General Plan goals and policies.

Consistency with Airport Land Use Plan

Impact 3.9-2 The proposed project is located within the "Airport Influence Area" of the Delano Municipal Airport, as determined by the *Kern County Airport*

Land Use Compatibility Plan. This is considered a **less than significant** impact.

The Delano Municipal Airport is located approximately one half mile east of the project site. The project site is located within the "Airport Influence Area" of the Delano Municipal Airport, as determined by the *Kern County Airport Land Use Compatibility Plan*.

According to the *California Airport Land Use Planning Handbook*, Kern County is subject to an alternative process regarding airport land use compatibility planning (Public Utilities Code Section 21670.1(d)). This exception to State law eliminated the need to establish an Airport Land Use Commission (ALUC) in Kern County. Kern County and affected cities agreed to adopt compatibility criteria consistent with the guidelines of the *California Airport Land Use Handbook*. Under this alternative process, the proposed project is subject to review and approval by the City of Delano to ensure consistency with the *Kern County Airport Land Use Compatibility Plan*.

As discussed in **Section 3.7**, **Hazards and Hazardous Materials**, the proposed project would be consistent with the density and open space requirements for the airport compatibility zone covering the project site. The proposed project would be subject to regulations found within the *Zoning Ordinance* Section 20.3.30, Airport Approach Height Combining District (H), and height restrictions set forth by Federal Aviation Regulations. See **Impact 3.7-6** for further discussion of safety and noise impacts due to proximity of the project site to the Delano Municipal Airport. This impact is considered **less than significant**.

Effects Upon an Established Community

Impact 3.9-3 The proposed project will not disrupt or divide an established community. The impact is considered **less than significant**.

The proposed project is adjacent to a Home Depot store located north of Woollomes Avenue, commercial uses located to the east between Garzoli Avenue and State Route 99, and agricultural uses to the west and south in unincorporated Kern County. The project site partially surrounds a parcel containing the Pioneer Restaurant, located on Woollomes Avenue. The proposed project will not divide a cohesive, established community because it is surrounded by other commercial uses and agricultural land. The proposed project is also consistent with the *City of Delano General Plan* commercial land use designations. Therefore, the impact is considered **less than significant**.

Conflict with any Applicable Habitat Conservation Plan

The project site is not subject to any habitat conservation plan or natural community conservation plan; therefore, **no impact** is expected.

Conflict with Surrounding Land Uses

Impact 3.9-4 Development of the proposed project could create land use compatibility conflicts with surrounding uses. This is considered a **less than significant** impact.

Land use impacts are primarily a function of a project's compatibility with surrounding land uses, which in this case are fallow agricultural land and commercial uses. Land use compatibility is measured in terms of specific environmental effects such as aesthetics, air quality (including dust and odor) and traffic. To the greatest extent possible, the EIR uses quantifiable data to measure such impacts, which can have an effect upon the quality of life in a defined area. For this reason, the land use analysis is supported by other specific discussions within the EIR, including **Section 3.1 Aesthetics**; **Section 3.3 Air Quality**; **Section 3.10 Noise**; and **Section 3.12 Traffic and Circulation**.

Fallow agricultural land exists on properties located south and west of the project site. Potential conflicts include trespassing by shopping center customers onto farmland and littering. These possible impacts will be reduced by the incorporation of screening trees and shrubs along the project's property lines and additional separation to the west by the future Dover Parkway.

Possible future agricultural operations could likewise potentially affect proposed commercial/retail uses. Potential conflicts from adjacent agricultural activities may include exposure to dust, odors, pesticides and/or herbicides. These effects would also be somewhat reduced due to the short-term exposure of customers and employees to these impacts and buffering provided by on-site trees and shrubs. In addition, agricultural land adjacent to the project site on the west has been designated for commercial use by the City of Delano in the *City of Delano General Plan* (2005), thereby limiting the duration of time remaining until that area is developed with urban uses.

Given the proximity of existing residential and commercial development, aerial application of pesticides on adjacent properties would be limited because the agricultural users have already had to adjust to the intrusion of urban uses. Therefore, the potential for pesticide drift would be minimal. In light of these factors, the potential impacts due to agricultural-urban conflicts associated with the proposed project would be considered **less than significant**. No mitigation measures are necessary.

The closed McFarland-Delano Landfill is located approximately 700 feet southwest of the project site. The *Kern County General Plan* (2004) protects solid waste disposal facilities from encroachment of incompatible land uses and intensive urban development. This policy is achieved via buffer zones, which can extend up to 1,320 feet from such a facility. The buffer zone for the McFarland-Delano Landfill extends to the southwest corner of the proposed project site, but does not overlap with the project's boundary; therefore, the

proposed project will experience a **less than significant** impact regarding compatibility with this closed solid waste disposal facility.

Potential for Urban Decay Due to Secondary Economic Impacts

Impact 3.9-5 Retail uses planned for the proposed project would compete with existing businesses in the City of Delano. This increased competition could potentially result in or contribute to closure of existing businesses in the City of Delano. However, the City of Delano currently has a very low vacancy rate and the City has several business retention and expansion programs in place. In addition, Chapters 7.32, Property Maintenance and Chapter 9.26, Graffiti of the City of Delano Municipal Code would ensure that properties are maintained if any buildings are vacated within the City limits. Therefore, the City of Delano has several programs which would ensure that secondary economic impacts associated with the proposed project would not result in urban decay. This is considered a **less than significant** impact.

In order to determine the potential economic impacts of the proposed project upon competing businesses in the City of Delano, a revised economic impact study was conducted by ADE in April 2007 for the RDEIR. The economic impact analysis was revised for the RDEIR to include a retail vacancy inventory within the City of Delano, project future demand within the Delano market area based on projections of future housing absorption, and anticipated residential construction activity, as well as revise the cumulative analysis in the report using the City's current cumulative project listing. The revised economic impact study is contained in Appendix G of this RDEIR and its main findings and conclusions are discussed below. The economic impact analysis prepared by ADE measures the proposed project's impacts based on estimated market conditions in 2008, when the majority of the proposed project would be occupied. Estimates are made regarding new sales that the proposed project will attract to the City of Delano, and the sales that may be taken from existing stores.

Background

Under CEQA, only direct and indirect physical effects of projects are to be considered in the preparation of an EIR. Section 15064(d) of the CEQA Guidelines provides: "In evaluating the significance of the environmental effect of a project, the lead agency shall consider direct physical changes in the environment which is caused by and immediately related to the project." Section 15064(d)(3) further states: "An indirect physical impact is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project. A change which is speculative or unlikely to occur is not reasonably foreseeable." In addition, CEQA requires that a determination that a project may have a significant environmental effect must be based on substantial evidence (CEQA Guidelines §15064(f)).

With respect to secondary socioeconomic effects of projects, Section 15131(a) of the CEQA Guidelines states: "Economic and social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes." In other words, economic and social changes are not, in themselves, considered under CEQA to be significant effects on the environment.

Since only physical effects are to be considered under CEQA, economic and social changes resulting from a project may be considered if they in turn produce changes in the physical environment. To fully satisfy the requirements of an EIR, an economic analysis must start with the economic impacts, but also follow the causal chain to assess the likelihood of new retail space causing long-term vacancies in existing retail space and ultimately leading to urban decay and physical deterioration of existing retail centers and nodes.

In the words of *Bakersfield Citizens for Local Control v. City of Bakersfield, Panama 99 Properties LLC, and Castle & Cooke Commercial-CA, Inc.,* the analysis is required to assess whether a new retail development "could cause a ripple of store closures and consequent long-term vacancies that would eventually result in general deterioration and decay within and outside the market area" of the proposed development. Further, "[t]hese effects include, but are not limited to, physical decay and deterioration resulting from store closures in the same market area or in established areas of the community (i.e., the 'traditional downtown area') due to competitive pressures, followed by an inability to easily re-lease the vacated premises." One concern is that large retailers that dominate sales in their merchandise lines "will displace older, smaller retail stores and shopping centers, leaving long-term vacancies that deteriorate and encourage graffiti and other unsightly conditions." An EIR "must analyze the cumulative impacts resulting from construction and operation of the proposed shopping center in conjunction with all other past, present or reasonably foreseeable retail projects that are or will be located within the proposed project's market area" and determine the likelihood that a project "individually and/or cumulatively, indirectly could trigger the downward spiral of retail closures and consequent long-term vacancies that ultimately result in decay." In light of the above, even if it could be shown that the proposed project would probably result in the failure of an existing competing business or businesses, the resulting building vacancy alone would not meet the above definition of urban decay.

As such, a building vacancy alone would not meet the CEQA threshold of significance for a physical change to the environment. To cause a significant physical impact, other contributing factors would need to occur such as lack of effort on the part of property owners to maintain or improve their properties to a condition suitable for leasing, combined with the

failure of surrounding businesses and physical deterioration of those properties. To reach a condition recognized as a physical impact under CEQA would require total neglect or abandonment of these properties by their owners for an extended period such that substantial physical deterioration, or urban decay, would ensue. As stated above, such an indirect physical impact must be a reasonably foreseeable result of the proposed project, requiring a showing of cause and effect, with the finding of such an impact supported by substantial evidence.

Although CEQA does not require analysis of economic impacts of the proposed project, the following analysis is presented as supporting evidence for subsequent conclusions on the likelihood that the proposed project would not indirectly result in or contribute to potentially significant adverse physical changes due to negative economic effects on businesses in the City of Delano.

Shopping Centers and Retail Districts in the City of Delano

The City of Delano has several existing shopping centers and retail districts, including the Central Business District, Delano Village Center, Randolph Village Center, and Cecil Plaza Shopping Center. These shopping centers have been maintained as ongoing retail spaces, and while some of the buildings have been minimally maintained, they do not currently exhibit signs of urban decay. The Central Business District in particular has had a lot of re-investment in recent years with the construction of streetscape improvements and some storefronts undergoing recent renovations.

With respect to existing vacancies, a walking survey of commercial areas in the City of Delano was performed by ADE in late Fall 2006 and found indications of a strong retail market. In the Central Business District, a total of 165 store fronts along Main Street and Jefferson Street were observed, as well as on cross streets of 6th, 7th, 8th, 9th, 10th and 11th Avenue. Of the 165 storefronts, nine were vacant. Therefore, there is a somewhat low vacancy rate of five percent, suggesting a healthy demand for space in the City's core, particularly by entrepreneurs seeking to serve the area's ethnic communities.

The majority of the store fronts at the Randolph Village Shopping Center are vacant due to ongoing renovation work in conjunction with the recent opening of the Vallerta Supermarket. The only large vacancies that currently exist in the City of Delano include the bowling alley and the former K-Mart location, which became vacant after K-Mart moved its store to a different location within the City of Delano. Neither of these buildings show significant signs of physical deterioration or abandonment, and according to the City, both sites have attracted interest from potential tenants and developers.

The City of Delano has several business retention and expansion programs already in place. These programs include an Enterprise Zone that provides tax credits, accelerated depreciation and other fiscal incentives; a Redevelopment Agency-sponsored façade

improvement program that provides up to $10,000 for exterior renovations; and a small business loan program. In addition, the City has invested in the Central Business District by funding streetscape improvements.

Summary of Economic Impact Analysis

Estimate of Retail Sales

The proposed project will encompass a broad range of retail store types that will sell products in nearly all categories. According to the economic impact study, the proposed center will generate approximately $126 million of total retail sales. The majority of these sales will come from the proposed Wal-Mart Supercenter. Because discount stores such as Wal-Mart Supercenters cover so many different product types under one roof, the impact analysis analyzes sales by store type, but also by product grouping. This is because Wal-Mart's products create the potential to impact on several different store types. Taken as a whole, the three largest product categories that the proposed project will account for include groceries; drugs, health, and beauty aids; and hardware. Each of these categories will potentially generate over $10 million in retail sales. In addition, all of the clothing categories combine for nearly $19 million in annual sales, while lawn and garden products will account for nearly $10 million of annual sales. The merchandise sales by store type are estimated below.

Wal-Mart Supercenter. ADE projects that the proposed Wal-Mart Supercenter will generate a total of $87 million in annual sales. Approximately $20 million will be generated through the sale of grocery products. Another $57 million will be generated from the expanded sale of general merchandise items. The remaining sales comprise garden center sales, the tire/lube center, gasoline sales, and miscellaneous tenant operations. The general merchandise section sales are based on a benchmark sales average of $387 per square foot. The grocery store sales are based on a national grocery store benchmark of $402 per square foot.

Because the Wal-Mart Supercenter will encompass discount store and grocery store uses, the sales are distributed into just about every major merchandise category. The largest single product sales category is groceries with nearly $19 million in projected sales. Clothing sales comprising footwear, and men's, women's, and children's clothing will total nearly $17 million. The other major product category is drugs, health, and beauty aids with nearly $9 million in sales. Gasoline sales will account for approximately $4.5 million in sales. The other large sales categories with more than $2 million in product sales include the following product types:

- soaps and household cleaners;
- curtains and dry goods;

- television and video equipment;
- kitchenwares and home furnishings;
- toys and hobbies;
- sporting goods; and
- lawn and garden sales.

Lowe's Home Improvement Store. Lowe's floor area will encompass a combination of home improvement and garden center uses, with projected annual sales of about $27 million. The sales generated by the Lowe's home improvement store are conservatively based on a national home improvement store benchmark of approximately $155 per square foot. Lowe's merchandise sales will likely occur primarily in building materials, hardware, and lawn and garden products. In each of these categories, the Lowe's home improvement store will generate over $6 million in annual sales. Paint products account for another $2 million in sales. These four categories alone account for over 90 percent of the projected merchandise sales at the proposed Lowe's store.

Other Retail Stores. The remaining 57,600 square feet will go to restaurants and other undetermined retail businesses. The economic impact analysis assumed that about 30,600 square feet would be used for restaurants and eating places. The estimated sales totals for these businesses is approximately $7 million.

The final tenant mix for the remaining retail uses has not yet been determined, so the economic impact analysis used a merchandise line distribution typical of specialty retail stores for these undetermined retail uses. According to the project applicant, inquiries into tenant spaces at the proposed project have primarily been clothing stores, drug stores, and various specialty retail store types. For determining the sales distribution by product type, the analysis used a combination of those store types. Estimated sales for the other retail stores will total about $6 million annually.

Regional Trade Area Description

The primary market area within the regional market trade area is the City of Delano. The secondary market comprises the census tracts outside of the City of Delano and within the indicated boundary. The northern and southern boundaries of the regional market trade area were delineated with the cities of Visalia, to the north, and Bakersfield, to the south. These boundaries represent approximately half the distance between either Delano and Visalia or Delano and Bakersfield.

In calculating household demand in the secondary market, the economic impact study did not assume that 100 hundred percent of household spending will occur in the City of Delano. The rate at which secondary market households shop in the City of Delano is

based on a ratio of store sales in Delano versus overall store sales in the regional market trade area. In this area, sales by retailers in the City of Delano amounts to approximately 73 percent of all sales by all retailers in the regional market trade area.

Household Spending

The 2008 household spending assumes a total of 12,098 households for the City of Delano, and 9,255 households for the secondary market area. Total regional household spending on retail goods is estimated at $413.5 million, of which, $241.2 million comes from households in the City of Delano and $172.3 million comes from households in the secondary market area. New and used cars and other vehicles represent $87 million of the total annual household spending, or 21 percent. However, households purchase automobiles on an infrequent basis. The relatively high price of new, used and other vehicles explains why this retail category represents a significant percentage of overall retail spending. With regards to more frequented retail categories, households in the region spend slightly over 22 percent of their total retail spending at grocery stores, or $90 million annually. Households in the region will spend approximately $75 million at department and general merchandise stores as well, or 18 percent of their total household retail spending.

Retail Sales Trends

Retail transactions in the City of Delano stores amounts to approximately $315.1 million, versus $93.5 million worth of retail transactions in stores in the secondary market. Altogether, retail transactions amount to $408.6 million in the regional market trade area.

New and used vehicles, grocery stores, home centers-nurseries-hardware stores, eating places, and general merchandise stores represent the largest portion of Delano's $315.2 million in total sales, with over three-fourths of the total citywide sales. In dollar terms, this amounts to $62 million (new and used vehicles), $57.8 million (grocery stores), $53.3 million (home centers), $37.2 million (eating places), and $45.6 million (general merchandise stores). In the secondary market, grocery stores and general merchandise are the leading sales categories. As a portion of the overall $93.5 million in sales, these categories represent 40.1 percent and 18.9 percent of overall sales, respectively.

Existing Retail Leakage

The data estimates the amount of household spending that is leaking out of the City of Delano and the secondary market area, perhaps to stores in Tulare County to the north or Bakersfield to the south. Retail sales leakage occurs when total spending within a specific store types exceeds actual sales in the same store type, meaning that households are spending their dollars outside of the region market trade area.

Local officials and the private sector can use information regarding retail and services sales leakage to either assist existing stores in capturing lost dollars, or to attract new stores into their respective areas. Thus, sales leakage analysis is an important step in understanding market opportunities for businesses, customers, and local governments seeking to increase sales taxes and employment. Approximately $101 million is leaking out of the regional trade market area. With proper marketing and planning, stores in the City of Delano could compete for this amount which would represent an opportunity for local stores.

Of the $101 million in overall leakage, $25 million occurs in general merchandise stores. Existing apparel stores in the City of Delano and the region at large are not benefiting from approximately $13 million in sales. There is nearly $37 million in leakage in the new, used and other vehicles category. In addition, grocery stores in the City of Delano and the secondary market are not benefiting from $2.1 million in sales.

ADE took the household spending data and reallocated the spending into transactions by merchandise line/product groups, as opposed to by retail store types. Similarly, ADE took the sales data and translated the totals by store type into sales transactions by merchandise line. These reallocations occur because a particular store type, such as a discount store in the department and general merchandise store category, will sell a variety of merchandise. The overall amount of household spending ($413.5 million) and sales by merchandise line item ($408.6 million) will remain the same as the overall amount of household spending and store sales by retail store types as presented in ADE's economic impact report.

The proposed project will generate an estimated $126.4 million in sales with $19.0 million occurring in the groceries and other foods merchandise line. Because there is an existing leakage of $4.4 million in the groceries and other foods merchandise line, the proposed project will absorb this outstanding leakage amount and potentially fulfill its target of $19.0 million in sales in the groceries and other foods merchandise line by "capturing" the remaining $14.6 million from existing stores operating in the City of Delano and elsewhere. With regard to the City of Delano and area stores that carry groceries and other food items, the bulk of which are grocery stores, the $14.6 million represents the impact of the proposed project on existing grocery stores. Overall, the proposed project will affect existing stores by approximately $86.9 million.

ADE translated the impacts by merchandise line items into impacts by retail store types. The overall merchandise line impact is reduced slightly due to the exclusion of non-merchandise sales from $86.9 million to $85.4 million. The impacts of the proposed project on grocery stores could amount to about a $16.6 million reduction in sales, of which $9.8 million would affect stores in the City of Delano. The largest impact could occur in the home improvement category, which could potentially affect an estimated $20 million in sales.

Of the small number of existing supermarkets within the groceries category, one can generate sales well in excess of industry standards. Another supermarket is expected to continue to operate, although it is worth watching closely with the opening of the proposed project. Given the small number of supermarkets, precise figures cannot be shared for reasons of confidentiality.

Urban Decay Potential

The most prominent stores that could potentially be affected by the proposed project include: general merchandise stores, specialty retail stores, grocery stores, furniture stores, appliance and electronic stores, and home improvement stores. Impacts to these stores are discussed below.

General Merchandise Store

The General Merchandise retail store group consists of discount stores, department stores, miscellaneous general merchandise stores, and pharmacies. This broad group of retailers includes existing stores in the City of Delano such as K-Mart, Rite-Aid, J.C. Penney, Smart and Final, Dollar Tree, and Factory 2U to name some of the national chain retailers. Other retailers in this category include a large concentration of "99-cent" variety stores in the Central Business District or downtown area. As a group, stores in the "General Merchandise" category generate an estimated $45.5 million in sales annually as projected for the opening year of the proposed project in 2008. The proposed project will potentially reduce sales to existing general merchandise stores by approximately $16.9 million, reducing retail sales at existing stores by approximately 32 percent, from approximately $45.5 million to $31 million. A reduction in sales alone does not constitute urban decay because businesses can potentially continue operating at lower revenue costs.

As the City of Delano and the surrounding region grow in terms of number of households, aggregate demand for types of retail stores and specific merchandise correspondingly increases. Therefore the affects of the proposed project on existing retailers in the City of Delano decreases as more and more people move to the area.

The most prominent stores in this category would include K-Mart, Rite-Aid, J.C. Penney, and Smart and Final. The existing K-Mart store would most likely directly compete with the proposed project, including the proposed Wal-Mart Supercenter. The potential for closure and creating a large 400,000 square foot vacancy that requires re-tenanting depends on whether the K-Mart store can feasibly continue to operate at a lower level of revenue. The other stores would compete more tangentially with the Delano Marketplace anchor tenants. The K-Mart store has recently made substantial upgrades to its Delano facility, modernizing this site by improving the interior and exterior of the building, as well as modifying the parking area. However, the J.C. Penney store in downtown Delano has not made similar investments to upgrade its building and may be more vulnerable to closure since its

operations are already marginal. Closure of the J.C. Penney store would create a large vacancy in the Central Business District that would also undercut the customer base for surrounding businesses.

Seven existing stores in the "General Merchandise" category are also at-risk of closure in the opening year of the proposed project. Some of the "General Merchandise" retailers are already exhibiting marginal sales, as their respective sales are significantly below average sales for similar stores in the county as a whole. These at-risk stores generally generate less than $100,000 in annual revenues.

In a conservative scenario, all of the at-risk stores in the "General Merchandise" group may close as a result of the proposed project. The remaining stores will compete for these sales. With their relatively low revenue levels, it is unlikely that other businesses benefit significantly from the presence of these at-risk businesses. It should be noted that these at risk businesses would still be at risk of closure whether or not the proposed project is built.

In summary, the emergence of the proposed project, which includes a Wal-Mart Supercenter and a Lowe's home improvement store is part of the ebb and flow of the market in which stores compete over a limited amount of household spending on a variety of goods, in this case goods sold by retailers in the "General Merchandise" retail store group. Market equilibrium is established when less efficient stores close, thus freeing up sales that are then captured by the remaining retailers.

Specialty Retail Stores

The Specialty Retail store group consists of arts-gifts-novelties, stationery-books, jewelry, sporting goods, florists, camera, music and miscellaneous other specialty retail stores. Specialty retail stores operating in Delano include Blockbuster Video, Delano Sporting Goods, Don Roberto Jewelry, Crescent Jewelers, CM Enterprises, La Nueva, and the Little Flower Shop. The majority of specialty retailers in the City of Delano are concentrated in the Central Business District.

As a group, specialty retailers annually generate an estimated $9.3 million in sales. The proposed project will potentially re-allocate approximately $4.2 million away from existing specialty retailers in the City of Delano, which would constitute about a 27 percent reduction.

Approximately seven specialty retailers are at-risk of closure with implementation of the proposed project, given their respective poor sales and how the proposed project will affect these stores. In a conservative scenario, all of the at-risk stores will potentially close freeing up approximately $238,439 in revenue. However, the remaining stores in the Specialty Retail category will not necessarily compete for this amount of sales because specialty retail stores are so highly differentiated. For example, the closure of a pet store

would not necessarily free up revenue that could be re-allocated to other types of specialty retail stores such as florists and jewelry stores. Therefore, none of the $238,439 is re-allocated to the remaining Specialty Retail stores, meaning that the residual sales as a result of the project amounts to $3.9 million, or 58 percent below the original $9.3 million in Specialty Retail sales.

Grocery Store Group

The Grocery Store retail store group consists of supermarkets, convenience stores, and specialty food stores. Included in this group of retailers are stores such as Delano Ranch Market, Save Mart, Zee Minimart, State Market, Lucky 7, Mercado Real and Vallarta Supermarket among other small stores. Grocery stores in the City of Delano annually generate an estimated $58.0 million in retail sales. The proposed project will affect sales by diverting approximately $10 million away from existing grocery stores.

Ranch Market and Save Mart are the two largest remaining supermarkets in the City of Delano along with State Market and the newly reopened Vallarta Supermarket. All of these supermarkets would compete most directly with the proposed Wal-Mart Supercenter. The downtown Ranch Market Vallarta Supermarket at Randolph Village caters more to a niche Latino clientele, with specialty prepared food sections that are not typically found in Wal-Mart Supercenters, while Save Mart stores typically have a larger amount of product crossover with Wal-Mart Supercenter. The Vallarta Supermarket is located in a renovated facility in a part of town where new retail development is underway, and it offers a full-service meat counter and produce for specific ethnicities. This supermarket occupies the site once held by the Monterey Supermarket. State Market is a general grocery store that is probably the most underutilized space among the four supermarkets in the City of Delano.

According to the economic impact study prepared by ADE, the data does not provide conclusive evidence as to whether or not any of these supermarkets will close as a result of direct competition with the Wal-Mart Supercenter, because it is not possible to anticipate owner decisions. However, the grocery store business depends on high sales volumes with low profit margins. In addition, the potential loss of sales may be uneven, and one store in particular might experience a greater than average proportion of sales taken away by the proposed project. The Save Mart store is the anchor tenant to the Delano Village Center and the loss of this supermarket could potentially affect the rest of this shopping center, which includes Taco Bell, Dollar Mart, Cingular Wireless, A&J Seafood, Lucky Money and Cigarette Depot.

In a conservative scenario for the proposed project, one supermarket in the City of Delano will potentially fail and approximately $4.2 million in sales would be re-allocated, which the remaining stores would compete for. Taking into account the redistribution of $4.2 million in sales for the remaining supermarkets, the impact is estimated to go from $58.2 million to $52.3 million for a net change of -10 percent. As the City of Delano and the

surrounding area grow in terms of the number of households, the aggregate demand for food stores correspondingly increases. Thus, the impacts of the proposed project on the existing City of Delano retailers, including food stores, are reduced over time. Based on data provided by ADE, the proposed project could affect sales at existing food stores in the City of Delano by approximately $1.4 million.

Furniture-Home Furnishing Group

The Furniture-Home Furnishings store group consists of retailers such as Serrano's Furniture, Lupe's and JJ Furniture store. As a group, furniture and home furnishing retailers annually generate an estimated $2.8 million in sales. In 2008, the proposed project will affect sales by these Delano-based stores by 0.6 million, meaning that as a result of the proposed project, overall sales will decline from $2.8 million to $2.2 million. It should be noted that the economic impact analysis assumes that second-hand stores such as Goodwill will not be affected by the proposed project. As a conservative analysis, the at-risk furniture and home furnishings store closure(s), would re-allocate approximately $62,360. The closure of the at-risk stores and the subsequent re-allocation of the store sales of $62,360 results in residual sales amounts of $2.2 million.

Appliance-Electronics Group

The Appliance and Electronic store group consists of Radio Shack, Ultimate Systems, Hometown Appliances, and the Patrick Gonzales store. This store group may face competition, given the presence of the Wal-Mart Supercenter and a home improvement store at the proposed project. As a group, the appliance and electronic retailers annually generate an estimated $1.2 million in sales. The proposed project would affect sales by these Delano-based stores by approximately $522,247 and retail sales for existing merchants in this category will decline from $1.2 million to $703,472. The re-allocation of sales from at-risk stores that close would result in a residual sales total of approximately $894,467. Potential closures of at-risk stores and the subsequent re-allocation of their sales to the remaining stores would result in a residual sales total of $894,467, which is -27 percent below the original aggregate sales of $1.2 million.

Home Improvement Group

The Home Improvement store group consists of nurseries-and-garden supply stores, lumber and building material stores, home centers and hardware stores, and paint and wallpaper stores. Included in the list of stores is Home Depot, which is located on Woollomes Avenue across from the proposed project site. As a group, the Home Improvement category generates an estimated $36.2 million to $53.3 million in sales. The impact analysis for the Home Improvement Group is slightly different from previous analyses included in the DEIR that assumed a "zero sum" relationship between the proposed project and the existing store group. The amount of impacts to the proposed project results in a

commensurate loss to the affected store groups. In the Home Improvement Group analysis, the relationship between the proposed project and the affected store group, particularly the existing Home Depot is a non-zero sum, meaning that the potential sales for the Lowe's home improvement store are also reduced. Sales estimates for Home Depot and Lowe's total $38 million and $31 million, respectively.

The analysis does not take the zero sum approach because it assumes that the introduction of Lowe's into a market where a Home Depot already exists would result in Lowe's achieving its sales expectations to the fullest (i.e. $31.0 million) at the expense of Home Depot. Given the relative newness of each store, as well as the fact that both are competing against each other in markets throughout the country, ADE predicts that Home Depot and Lowe's will compete on a head-to-head basis, meaning that there will be an ebb and flow in store sales such that eventually both will cut into each other's sales. Instead of hitting their respective sales averages of $38 million and $31 million, the Home Depot and Lowe's store sales will achieve an estimated $23.2 and $18.9 million in sales. Other home improvement stores besides Home Depot and Lowe's may be affected with implementation of the proposed project. These stores will bear a share of the $17.1 million dollar Lowe's impact that is proportional to their existing share of the market, or $4.0 million, with the remaining $13.1 million divided between Lowe's and Home Depot.

Even though Home Depot and the Lowe's store will cut into one another's sales, they will continue to operate, albeit at lower levels of performance. A review of confidential information on store sales by other stores in the Home Improvement retail group suggests that, as a result of the presence of both Home Depot and the proposed store, approximately six stores are significantly underperforming, and could potentially close, resulting in a loss of $578,407 in sales. Home Depot and the proposed Lowes home improvement store will capture the bulk of this amount. It should be noted, however, that many businesses in the home improvement category also typically offer contractor and construction services, and do not necessarily depend on product sales to stay in business. Therefore, the worst-case scenario is not likely in this case. As the City of Delano and the surrounding region grow in terms of the number of households, aggregate demand for home improvement stores will also increase.

Other Factors

In addition to the possibility of business closures resulting from retail sales shifting away from existing retail businesses, another factor that could result in retail vacancies in the existing retail centers in the City of Delano is businesses relocating to the Delano Marketplace project site. Aside from the anchor spaces for the Wal-Mart Supercenter and the home improvement store, the proposed project provides for nearly 54,600 square feet of space for restaurants and general retail use. Together, these uses are expected to attract approximately $12.9 million in annual retail sales. If these retail spaces are filled by

relocating existing Delano retailers, then it could have the same local effect as a business closure because it creates a vacancy that requires re-tenanting.

With respect to re-tenanting, a walking survey of commercial areas in the City of Delano in late Fall of 2006 found indications of a strong retail market. In the downtown area, surveyors observed 165 store fronts along Main Street and Jefferson Avenue, as well as on cross streets of 6th, 7th, 8th, 9th, 10th, and 11th Street. Of the 165 storefronts, nine were vacant, which is a somewhat low vacancy rate of five percent, suggesting a healthy demand of space in the city's core, particularly by entrepreneurs seeking to serve the area's ethnic communities. In addition, a majority of the storefronts at the Randolph Village shopping center are vacant due to ongoing renovation work in conjunction with the recent opening of the Vallarta Supermarket.

Urban Decay Potential of Existing Commercial Areas and Stores

The proposed project would result in a significant net increase in the overall retail activity within the City of Delano, which may draw at least some sales away from existing retail centers. New retail competition introduced by the proposed project could indirectly result in or contribute to the potential closure of existing businesses in the City of Delano. However, a building vacancy alone does not constitute urban decay. Depending on market conditions, a vacated retail space may be re-tenanted. Even in the case of prolonged vacancies, properties that are maintained in a condition suitable for reuse would not meet the definition of physical deterioration or urban decay unless they are not properly maintained. Only under conditions of long-term vacancy and abandonment of properties by their owners would a property be susceptible to sufficient deterioration and degradation to meet the definition of urban decay.

The analysis prepared by ADE considered the potential for urban decay and physical deterioration for each of the competing Delano retail nodes, taking into account the impacts of the proposed project. Five commercial areas or stores in the City of Delano were identified as being the most vulnerable to the affects of the proposed project including the following:

- the K-Mart store;
- the Central Business District (CBD) or downtown area;
- the Save Mart grocery store, located in the Delano Village Center;
- the Randolph Village Shopping Center; and/or
- the Cecil Plaza Shopping Center.

The potential for urban decay to result from implementation of the proposed project at these locations is described below:

K-Mart Store

The K-Mart store has recently made substantial improvements to its interior and exterior of its Delano store, perhaps in an effort to shore up its position relative to the impending Wal-Mart Supercenter and in doing so maintain if not expand its customer base. It remains to be seen whether or not these efforts will pay dividends for the K-Mart store, as customers for merchandise from stores such as Kmart and Wal-Mart are driven by value. In the event that the K-Mart store closes due to direct competition with the proposed Wal-Mart Supercenter, the site would be amendable to redevelopment for highway commercial uses such as a travel center or truck stop due to its proximity to State Route 99 and the existing concentration of lodging and highway commercial uses nearby. In addition, the K-Mart site does not include ancillary uses so the potential closure of the K-Mart store would not affect other businesses, which could be affected by the closure of a large anchor store.

Randolph Village

The Randolph Village Shopping Center is currently under renovation with the recent opening of the Vallarta Supermarket. The former Monterey Market site was renovated as part of the Vallarta Supermarket locating to the Randolph Village Shopping Center. Currently, the majority of the center is vacant due to the renovation of the ancillary retail spaces. The impact on those spaces will depend on the retail tenants that will locate at the proposed project. However, because the Randolph Village Shopping Center has attracted new investment and had renovation work completed, the buildings at the Randolph Village are unlikely to physically deteriorate and establish a pattern of urban decay.

Central Business District

The potential for store closures in the Central Business District would be primarily due to competition of the at-risk general merchandise stores (primarily 99-cent variety stores), specialty retail stores, and the J.C. Penney store with the proposed project. The J.C. Penney store would compete less directly with the Wal-Mart Supercenter; however the current store also operates in an undersized space that has not been recently renovated. This factor in addition to the reduction in market support also puts the J.C. Penney location at risk of closure and/or potential relocation.

The other at-risk stores in the Central Business District are already marginal operations and their contribution to the downtown area is minimal because these types of businesses operate at very low subsistence levels and do not generate significant foot traffic, which would benefit surrounding stores. The other businesses in the Central Business District view the at-risk stores as a negative business climate factor and do not believe they benefit

from the continued operation of these at-risk stores. The closure of at-risk specialty merchandise stores would most likely not result in additional store closures as the remaining specialty stores in the Central Business District are highly differentiated. Any potential closures would create vacancies; however, the existing downtown businesses could be filled by other types of businesses (including office space) that would have a greater potential to have more successful operations than the current at-risk stores. In addition, the historical role of the Central Business District as a commercial center in Delano and the investment value of the existing buildings are mitigating factors that would address any at-risk store closures. In addition, the existing vacancy rate in downtown Delano is very low.

The property owners in the Central Business District have favorable business conditions, which ensure that buildings are amenable to a variety of different uses, should a vacancy of a retail space or spaces occur as a result of direct competition with the proposed project. In recent years, the majority of vacated retail spaces in the Central Business District have had new retail tenants fill those spaces, while others have been reused as spaces for service establishments. The City of Delano also administers ongoing including a façade improvement program provided through the Redevelopment Agency that provides up to $10,000 for exterior renovations; the City's Enterprise Zone that provides business incentives such as tax credits and accelerated depreciation; and a small business loan program that provides low interest loans. Even though oversaturated retail market conditions could potentially result in vacancies, the programs already in place and existing reuse patterns create incentives for business owners to move into the Central Business District, and for property owners to maintain their properties in conditions suitable for re-tenanting, which would ensure that substantial physical deterioration or urban decay would not occur in the Central Business District.

Save Mart/Delano Village Center

The Save Mart grocery store may be at risk of closure due to direct competition with the proposed project. Such a closure may also affect the neighboring stores in the Delano Village Center where the Save Mart is located, as the Save Mart generates significant traffic that benefits these complementary businesses.

The impact analysis conducted by ADE projects that one existing supermarket would potentially close as a result of the proposed project, which would strengthen the competitiveness of the remaining supermarkets. Although, the remaining grocery stores are projected to experience about a ten percent reduction in sales upon implementation of the proposed project, several mitigating factors would potentially allow this store to continue operating and thus not contribute to conditions leading to urban decay. These mitigating factors include the following: 1) Central Valley real estate costs are typically lower than the national average; 2) labor costs for identical occupations are typically lower in the Central

Valley than in the rest of California; and 3) the other existing grocery stores in the City of Delano are primarily convenience stores that lack the range of goods and services provided by the Save Mart store.

Currently, the Delano Village Center does not have any vacancies, which indicates strong existing market conditions. However, if the Save Mart store had to vacate its store due to competition from the proposed project, it is unlikely that it would result in significant additional closures in the Delano Village Center that would lead to substantial physical deterioration or urban decay. This conclusion is supported by the successful track record of the City with re-tenanting of anchor spaces and long-term vacancies within the City that have thus far not resulted in urban decay. The recent renovation of the Monterey Supermarket site is an example of a large retail vacancy that was filled quickly. In addition, the former bowling alley and K-Mart sites remain vacant, but the sites have attracted inquiries from prospective buyers and the vacant buildings themselves thus far have not created a pattern of urban decay. In addition, the Delano Village Center is located within the City's Redevelopment Area and the City's Enterprise Zone, which creates considerable flexibility for building reuse and incentives for many types of businesses to locate to the site.

Cecil Plaza Shopping Center

The Cecil Plaza Shopping Center is anchored by the Factory 2-U discount store and is located adjacent to the State Market supermarket. Factory 2-U will be affected by the reduction in sales that the proposed project will create, but the store primarily carries off-price merchandise and therefore is less of a direct competitor than some of the other large general merchandise stores such as K-Mart and J.C. Penney. However, the nearby State Market attracts shoppers to the area around Cecil Plaza and it is the most vulnerable among the four supermarkets in the City of Delano. If the State Market closes, it would potentially affect Cecil Plaza Shopping Center by reducing the number of customers to the shopping center. However, if the State Market had to vacate its store due to competition from the proposed project, it is unlikely that it would result in significant additional closures in the Cecil Plaza Shopping Center that would lead to urban decay. The low vacancy rates throughout the City and the existing reuse patterns for turning some vacant retail spaces into office spaces reduces the potential for urban decay at the Cecil Plaza Shopping Center. The location of the Cecil Plaza Shopping Center benefits from its proximity to existing service uses. In addition, the shopping center is located within the City's Redevelopment Area and Enterprise Zone, which creates considerable flexibility for building reuse and incentives for many types of businesses to locate to the project site.

The proposed project would result in a net reduction in overall sales leakage and would subsequently create a net increase in sales and property tax revenues for the City of Delano. The proposed project would increase the annual property tax revenues by

approximately $620,000. Since the project site is located within a redevelopment district, 60 percent of these revenues will accrue as a tax increment for Redevelopment Agency activities.

Although, some building vacancies may occur with implementation of the proposed project, a building vacancy alone would not meet the CEQA threshold of significance for a physical change to the environment. To cause a significant physical impact, other contributing factors would need to occur such as lack of effort on the part of property owners to maintain or improve their properties to a condition suitable for leasing, combined with the failure of surrounding businesses and physical deterioration of those properties. To reach a condition recognized as a physical impact under CEQA would require total neglect or abandonment of these properties by their owners for an extended period such that substantial physical deterioration, or urban decay, would ensue.

The City of Delano has recent precedent with retail re-tenanting of anchor spaces, and long-term vacancies that have thus far not resulted in urban decay. For the Central Business District in particular, vacancies could be filled by other types of businesses including office space, that would have a greater potential to be successful than the current at-risk stores. The City of Delano has several business retention and expansion programs already in place, including an Enterprise Zone that provides tax credits, accelerated depreciation and other fiscal incentives; a Redevelopment Agency-sponsored façade improvement program that provides up to $10,000 for exterior renovations; and a small business loan program limits. The City has also invested in its downtown by funding streetscape improvements. These programs would assist existing businesses to ensure that they are not affected by the proposed project and would not be subject to prolonged vacancy resulting in potential urban decay. In addition, Chapter 7.32, Property Maintenance and Chapter 9.26, Graffiti of the City's Municipal Code would ensure that properties are maintained should any unoccupied building be neglected within the City. With these City policies and programs in place, the proposed project would have a **less than significant impact** with respect to urban decay and physical deterioration at the K-Mart store, Randolph Village, Cecil Plaza Shopping Center, Delano Village Shopping Center, and the Central Business District.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Potential for Urban Decay Due to Secondary Cumulative Economic Impacts

Impact 3.9-6 The proposed project, combined with other foreseeable projects in the City of Delano may result in the closure of businesses in the City of Delano. However, business retention and expansion programs currently in place, as well as Chapter 7.32, Property Maintenance and Chapter 9.26, Graffiti of the City of Delano Municipal Code would ensure that urban decay due to

secondary cumulative land use impacts would not occur. This is considered a **less than significant impact.**

The retail market impact analysis conducted by ADE assessed the impacts of the proposed project in the context of other likely commercial developments in the market area or affecting the market area. In consultation with City staff, the cumulative commercial projects in the City of Delano were identified and utilized in the analysis prepared by ADE. In addition to the Delano Marketplace project, several other large-scale development projects have been discussed and/or proposed for the City of Delano. These projects are generally in a much earlier stage in the approval process with the potential tenants in a somewhat tentative stage. The cumulative projects also include 4,800 units of new housing units in process, and over 145 acres of industrial development in varying stages of the approval process. As defined in this early stage, these cumulative projects would add approximately 1.9 million square feet of new commercial space to the City of Delano market. Because the phasing of these projects is unknown, the analysis incorporated herein is up to the year 2030.

Based on some preliminary information and assumptions about large retail centers located within the City of Delano, the analysis assumes that approximately 36 percent of the square footage would go towards General Merchandise stores (such as department stores, warehouse clubs, and other general merchandise retailers), while eating places would occupy another 17 percent of the floor space. The remaining 47 percent would go to other types of retail such as specialty retail, clothing stores, office supplies, and home improvement. The sales potential for the cumulative projects totals approximately $488 million. This would potentially cause new market pressures for existing businesses, as well as businesses locating in the proposed project. With the shopping center in operation, the annual retail sales in the regional market area will total approximately $535 million. This compares with the $784 million of total household spending in the market area. This results in a regional capture of $78 million, compared to a total spending leakage of $327 million. Much of the regional capture will be accounted for by the home centers. Spending leakage, even with the proposed project, will occur in most other retail categories.

By 2030, the cumulative projects together will recapture approximately $212 million of the $327 million in retail leakage. The remaining $277 million of the $488 million in retail sales potentially generated by the cumulative projects would capture sales from existing retail stores, about $189 million will affect stores in the City of Delano. These impacts would include stores in the Delano Marketplace project. The impacts of cumulative development would total approximately $189 million by 2030. It should be noted that the cumulative projects will be phased in over time. Therefore, impacts are considered incremental impacts.

Of the impacts associated with the cumulative projects in 2030, one of the largest categories is Department and General Merchandise, which includes discount stores and traditional department stores. This retail category will exert an impact of about $67 million. Despite a growing population, there is still insufficient enough unmet demand from consumer households. Thus, general merchandise stores that would potentially anchor the cumulative project developments would potentially achieve store sales by cutting into local retailers. This would likely include the existing K-Mart and J.C. Penney stores, as well as the Wal-Mart Supercenter developed as part of Delano Marketplace. The impacts will vary with the tenant mix. For example, a traditional department store would likely affect the proposed Wal-Mart Supercenter less than a competing discount store with grocery sales or a warehouse club (which also sells groceries).

Grocery stores is another category in which the cumulative projects will continue to affect local supermarkets, in addition to the negative impacts associated with the proposed project. By 2030, the proposed project would exert an incremental impact of $20 million on local grocery stores. These cumulative projects would further undercut the sales for existing supermarkets, and could potentially result in at least one additional store closure. As mentioned earlier, if the store closure is Save Mart, then it could potentially affect other stores in the Delano Village Shopping Center.

Specialty retail stores will absorb a cumulative impact of $21 million in 2030. Given that the existing retail sales in this category total less than $10 million after the development of the proposed project, much of this impact will also affect any new specialty retailers that are part of the proposed project. The impacts in this category will vary with the final tenant mix.

Eating places is another category with a significant impact potential. The projected impact for 2030 totals $55 million, which would contribute to significant displacement of existing eating places, including those establishments locating in the proposed project.

Cumulative Urban Decay Potential

The 1.9 million square feet of new commercial space from the cumulative projects will generate higher retail sales than the population growth through 2030 may able to support. This puts additional market pressures on vulnerable retail centers and shopping districts, resulting in approximately $189 million of economic impact on existing stores (including those in the Delano Marketplace). This impact would potentially result in additional store closures and retail vacancies.

Because of the presence of strong anchor tenants that will continue to attract shoppers, the proposed project will likely remain a viable retail center for the foreseeable future. Even if the economic impacts from cumulative projects inordinately reduce sales for the proposed

project and create retail vacancies among the secondary tenants, the anchor tenants will likely ensure that the buildings and facilities continue to be maintained.

Even though the Central Business District could also potentially lose businesses once all of the cumulative projects come online, the role of Central Business District will likely continue to evolve, and continued investment and maintenance in the downtown area, which will ensure that physical deterioration or urban decay does not occur. The continued growth in the Delano market will create other business opportunities, particularly with service establishments, even if the cumulative projects erode market support for downtown retail stores. Service businesses have already moved into vacant retail spaces in the Central Business District, so the market already exists for this type of space reuse.

Depending on the composition of the commercial tenants that would locate in the cumulative projects, new retail space in the City could potentially result in store closures in the Delano Village, Cecil Plaza, and Randolph Village shopping centers. The magnitude of the additional impacts from the cumulative projects could potentially result in the abandonment of Delano Village and/or Cecil Plaza. The magnitude of the additional impacts from cumulative projects could threaten the viability of Delano Village and/or Cecil Plaza due to its proximity to existing service businesses located in the Central Business District. The potential for re-tenanting of those properties would depend on the prospects for market growth to create other tenanting or reuse options for those retail centers. As with downtown, service establishments can potentially move into vacant retail spaces in Cecil Plaza due to its proximity to existing service businesses located in the Central Business District.

Delano Village has a high visibility location, but the market support for retail tenants in that shopping center would potentially decline as the cumulative projects are built out. With the larger store spaces, other options may need to be identified if new retail tenants cannot be found. These options include building demolition and using the site for other types of land uses if the market conditions force the retail uses at the center to vacate.

Preventing the re-tenanting of buildings under cumulative conditions at the Delano Village and Cecil Plaza shopping centers will depend on whether the projected population growth for Delano can be channeled towards other uses that would fill these types of smaller infill sites. The City of Delano has several business retention and expansion programs already in place, including an Enterprise Zone that provides tax credits, accelerated depreciation and other fiscal incentives; a Redevelopment Agency-sponsored façade improvement program that provides up to $10,000 for exterior renovations; and a small business loan program limits. If the proposed project and cumulative projects create store vacancies in the City, these programs would assist businesses to ensure that there are not prolonged vacancies which result in urban decay. In addition to market solutions such as reuse and re-

tenanting, Chapter 7.32, Property Maintenance and Chapter 9.26, Graffiti of the City's Municipal Code would ensure that properties are maintained should any stores be vacated within the City limits under cumulative conditions. With these City policies and programs in place, the proposed project would have a **less than significant cumulative impact** with respect to urban decay and physical deterioration at the K-Mart store, Randolph Village, Cecil Plaza Shopping Center, Delano Village Shopping Center and the Central Business District.

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Section 3.10
Noise

This section of the RDEIR discusses the existing noise environment of the area and identifies predicted changes to that environment that may result from the proposed project. The analysis quantifies noise levels caused by project-generated traffic and by on-site activities and compares those levels to City standards. The analysis is based primarily on a noise impact assessment conducted by AMBIENT Air Quality & Noise Consulting, which is based on the revised traffic impact analysis completed in March 2007. The noise impact assessment is incorporated herein. FHWA Noise Prediction modeling results are included in Appendix I of this RDEIR.

3.10.1 EXISTING SETTING

ACOUSTIC FUNDAMENTALS

Noise is often defined as unwanted sound. Sound is a mechanical form of radiant energy transmitted by pressure waves in the air. It is characterized by two parameters: amplitude (loudness) and frequency (tone).

Amplitude

Amplitude is the difference between ambient air pressure and the peak pressure of the sound wave. It is measured in decibels (dB) on a logarithmic scale. For example, a 10-dB sound is 10 times the pressure difference of a 1-dB sound; a 20-dB sound is 100 times the pressure difference of a 1-dB sound. Another feature of the decibel scale is the way in which sound amplitudes from multiple sources added together. A 65-dB source of sound, when joined by another identical 65-dB source, results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to loudness. Laboratory measurements correlate a 10-dB increase in amplitude with a perceived doubling of loudness and establish a 3-dB change in amplitude as the minimum audible difference perceptible to the average person.

Frequency

Frequency is the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sounds of different frequencies. Sound waves below 16 Hz or above 20,000 Hz cannot be heard at all, and the ear is more sensitive to sound in the higher portion of the audible range than in the lower. To approximate human sensitivity to sound, environmental sound is usually measured in A-weighted decibels (dBA). On this scale, the normal range of human hearing extends from approximately 10 dBA to approximately 140 dBA. **Figure 3.10-1, Typical Noise Levels** depicts several examples of noise levels typically associated with common noise sources.

NOISE DESCRIPTORS

The intensity of environmental noise fluctuates over time, and several descriptors of time-averaged noise levels are used. The three most commonly used descriptors are L_{eq}, L_{dn}, and CNEL. The energy-equivalent noise level, L_{eq}, is a measure of the average energy content (intensity) of noise over any given period. Many communities use 24-hour descriptors of noise levels to regulate noise. The day-night average noise level, L_{dn}, is the 24-hour average of the noise intensity, with a 10-dBA "penalty" added for nighttime noise (10 p.m. to 7 a.m.) to account for the greater sensitivity to noise during this period. CNEL, the community equivalent noise level, is similar to L_{dn} but adds an additional 5-dBA penalty for evening noise (7 p.m. to 10 p.m.). Noise analyses often depend on measurements of L_{max}, the maximum instantaneous noise level during a specific period of time (sometimes referred to as the "peak noise level"), and L_{min}, the minimum instantaneous noise level during a specific period.

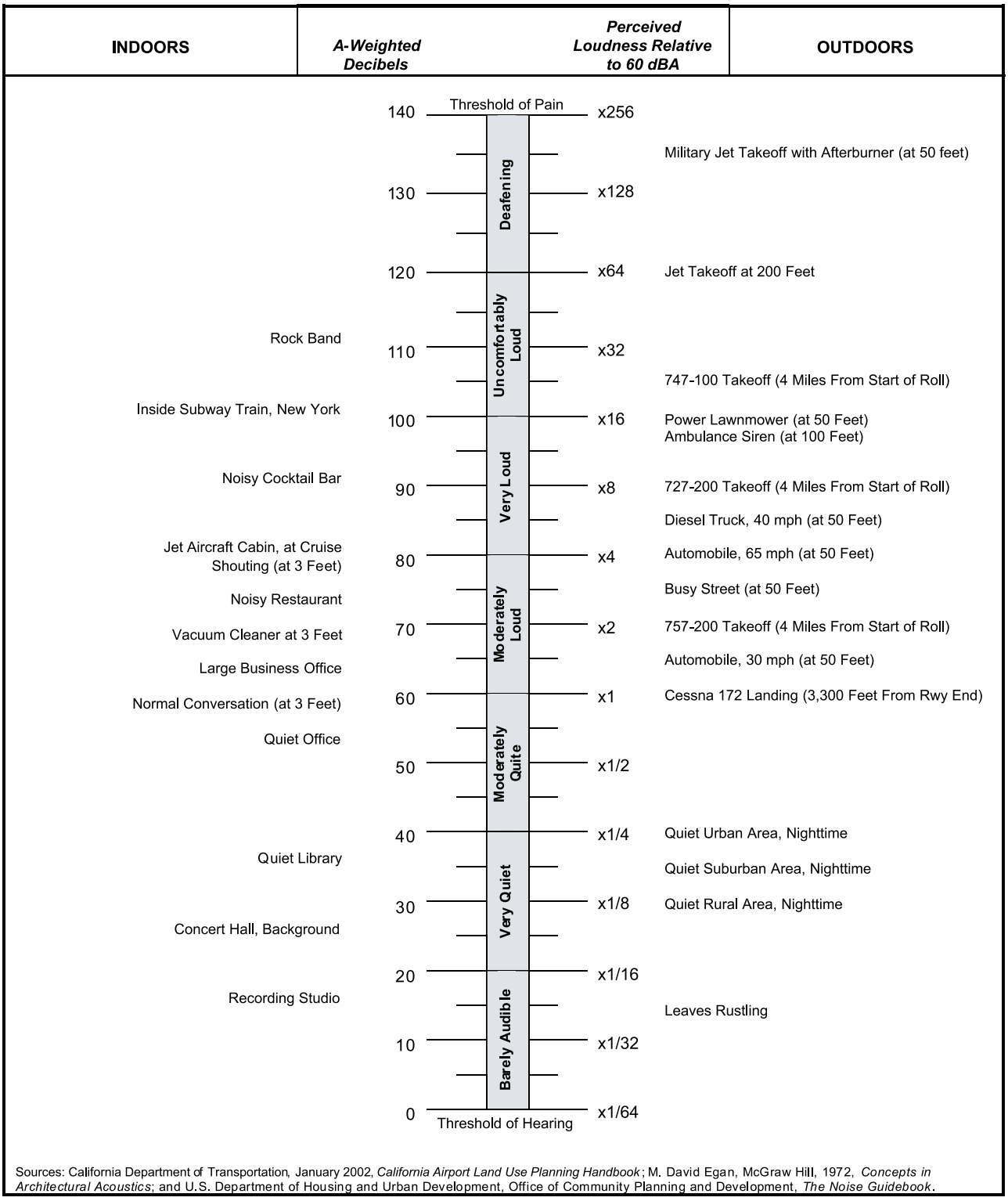
CHARACTERISTICS OF SOUND PROPAGATION AND ATTENUATION

Noise can be generated by a wide variety of sources, including mobile sources, such as automobiles, trucks, and airplanes, and stationary sources, such as machinery and industrial operations. Noise generated by mobile sources typically attenuates (is muffled or reduced) at a rate of 3.0 to 4.5 dBA per doubling of distance, depending on the ground surface and the number or type of objects between the noise source and the receiver. Hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of approximately 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate of 6.0 to 7.5 dBA per doubling of distance.

Sound levels can be reduced by placing barriers between the noise source and the receiver. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver. Buildings, concrete walls, and berms can all act as effective noise barriers. Wooden fences or broad areas of dense foliage also can reduce noise but are less effective than solid barriers.

HUMAN RESPONSE TO NOISE

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases.



Sources: California Department of Transportation, January 2002, *California Airport Land Use Planning Handbook*; M. David Egan, McGraw Hill, 1972, *Concepts in Architectural Acoustics*; and U.S. Department of Housing and Urban Development, Office of Community Planning and Development, *The Noise Guidebook*.

Source: Ambient, 2005

T:\Delano Plaza\Graphic Development\Illustrator Files\Figure 3.10-1.ai, October 2005

FIGURE 3.10-1
TYPICAL NOISE LEVELS

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The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted, the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by the hearers. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this noise assessment (U.S. EPA 1971):

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

EXISTING NOISE ENVIRONMENT

Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are also considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses.

Land uses adjacent to the project site consist primarily of agricultural land, as well as various commercial and light industrial land uses. Commercial and light industrial land uses are primarily located north of the project site, across Woollomes Avenue, and east of the project site, along Garzoli Avenue. The nearest existing noise-sensitive receptors are residential dwellings, the closest of which are located approximately 0.3 mile south and 0.5 mile west of the project site.

Existing Noise Environment

The existing noise environment in and surrounding the project site is influenced primarily by surface transportation noise emanating from vehicular traffic on State Route 99. To a lesser extent, additional noise sources, including planes flying overhead and vehicle traffic on area roadways (e.g., Woollomes and Garzoli Avenues), also contribute to the existing background noise levels. Existing traffic noise contours for State Route 99, in relation to the project site, are depicted in **Figure 3.10-2, Existing Noise Environment**. Predicted traffic noise contours for State Route 99 were calculated using the FHWA Noise Prediction Model, based on an annual average-daily traffic volume of 51,000 vehicles, obtained from the California Department of Transportation (Caltrans 2005). As depicted in **Figure 3.10-2, Existing Noise Environment** portions of the project site are located within the predicted 60 and 65 dBA L_{dn}/CNEL noise contours of State Route 99.

To document the existing noise environment in the vicinity of the project site, an ambient noise survey was conducted on January 19, 2005. Measurement locations and ambient noise levels are depicted in **Figure 3.10-2, Existing Noise Environment**. Based on the measurements conducted, average daytime noise levels (in dBA L_{eq}) within the project area generally range from the upper-50s to the mid-60s, dependent primarily on distance from nearby roadways, including State Route 99. Existing traffic noise levels are depicted in **Table 3.10-1, Predicted Existing Traffic Noise Levels**.

3.10.2 REGULATORY SETTING

STATE OF CALIFORNIA

The State of California General Plan Guidelines (State of California 2002), published by the state Governor's Office of Planning and Research (OPR), provides guidance for the acceptability of projects within specific CNEL/L_{dn} contours. **Table 3.10-2, State of California Land Use Compatibility Guidelines** summarizes acceptable and unacceptable community noise exposure limits for various land use categories. Generally, residential uses are considered to be acceptable in areas where exterior noise levels do not exceed 60 dBA CNEL/L_{dn}. Residential uses are normally unacceptable in areas exceeding 70 dBA L_{dn} and conditionally acceptable within 55 to 70 dBA L_{dn}. Schools are normally acceptable in areas up to 70 dBA CNEL and normally unacceptable in areas exceeding 70 dBA CNEL. Commercial uses are normally acceptable in areas up to 70 dBA CNEL. Between 67.5 and 77.5 dBA CNEL, commercial uses are conditionally acceptable, depending on the noise insulation features and the noise reduction requirements. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

TABLE 3.10-1
PREDICTED EXISTING TRAFFIC NOISE LEVELS

Roadway Segments	Predicted Noise Level (dBA CNEL/L_{dn})		
	50 Feet from Near Travel Lane Centerline*	Distance to Traffic Noise Contours	
		55	60
Woollomes Avenue, Albany Street to Dover Parkway	60.52	130.	60.6
Woollomes Avenue, Dover Parkway to Site Access	62.39	173.1	80.5
Woollomes Avenue, Site Access to Garzoli Avenue	62.62	179.5	83.5
Woollomes Avenue, Garzoli Avenue to State Route 99	65.41	275.1	127.8
Woollomes Avenue, State Route 99 to Lexington Street	64.54	240.8	111.9
Albany Street, Woollomes Avenue to 1st Avenue	60.83	136.3	63.5
Stradley Avenue, Woollomes Avenue to Schuster Ave.	58.19	91.0	WR
Garzoli Avenue, Woollomes Avenue to Schuster Ave.	61.49	150.9	70.3
Garzoli Avenue, Schuster Avenue to Pond Road	58.93	101.9	WR
Pond Road, Garzoli Avenue to State Route 99	60.21	123.9	57.8

Source: AMBIENT Air Quality & Noise Consulting 2007
*Note: *Traffic noise levels were modeled using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) based on traffic information (e.g., average daily traffic, vehicle speeds, roadway width) obtained from the data prepared for this project. Modeling assumes no natural or human-made shielding (e.g., vegetation, berms, walls, buildings). WR = Within Roadway Right-of-way.*

TABLE 3.10-2
STATE OF CALIFORNIA LAND USE COMPATIBILITY GUIDELINES

Land Use	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Residential-Low Density Single Family, Duplex, Mobile Home	< 60	55-70	70-75	75 +
Residential-Multiple Family	< 65	60-70	70-75	75 +
Transient Lodging, Motel, Hotel	< 65	60-70	70-80	80 +
School, Library, Church, Hospital, Nursing Home	< 70	60-70	70-80	80 +
Auditorium, Concert Hall, Amphitheater		< 70	65 +	
Sports Arenas, Outdoor		< 75	70 +	

Land Use	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Spectator Sports				
Playground, Neighborhood Park	<70		67.5-75	72.5+
Golf Courses, Stable, Water Recreation, Cemetery	<75		70-80	80+
Office Building, Business Commercial & Professional	<70	67.5-77.5	75+	
Industrial, Manufacturing, Utilities, Agriculture	<75	70-80	75+	

Source: State of California Governor's Office of Planning and Research, 2002
Notes:

[1] Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

[2] New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

[3] New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.

[4] New construction or development should generally not be undertaken.

CITY OF DELANO GENERAL PLAN

The Noise Element of the *Delano General Plan* (2005) establishes specific policies to ensure an acceptable noise environment for each land use. Applicable policies include the following:

Policy 1 Table 7-1 (shown as **Table 3.10-2, State of California Land Use Compatibility Guidelines**, above) depicts the ranges of noise exposure from transportation noise sources, which are considered acceptable, conditionally acceptable, or conditionally unacceptable for the development of different land uses. Table 7-1 shall be used to determine whether mitigation is needed for development of land uses near major transportation noise sources.

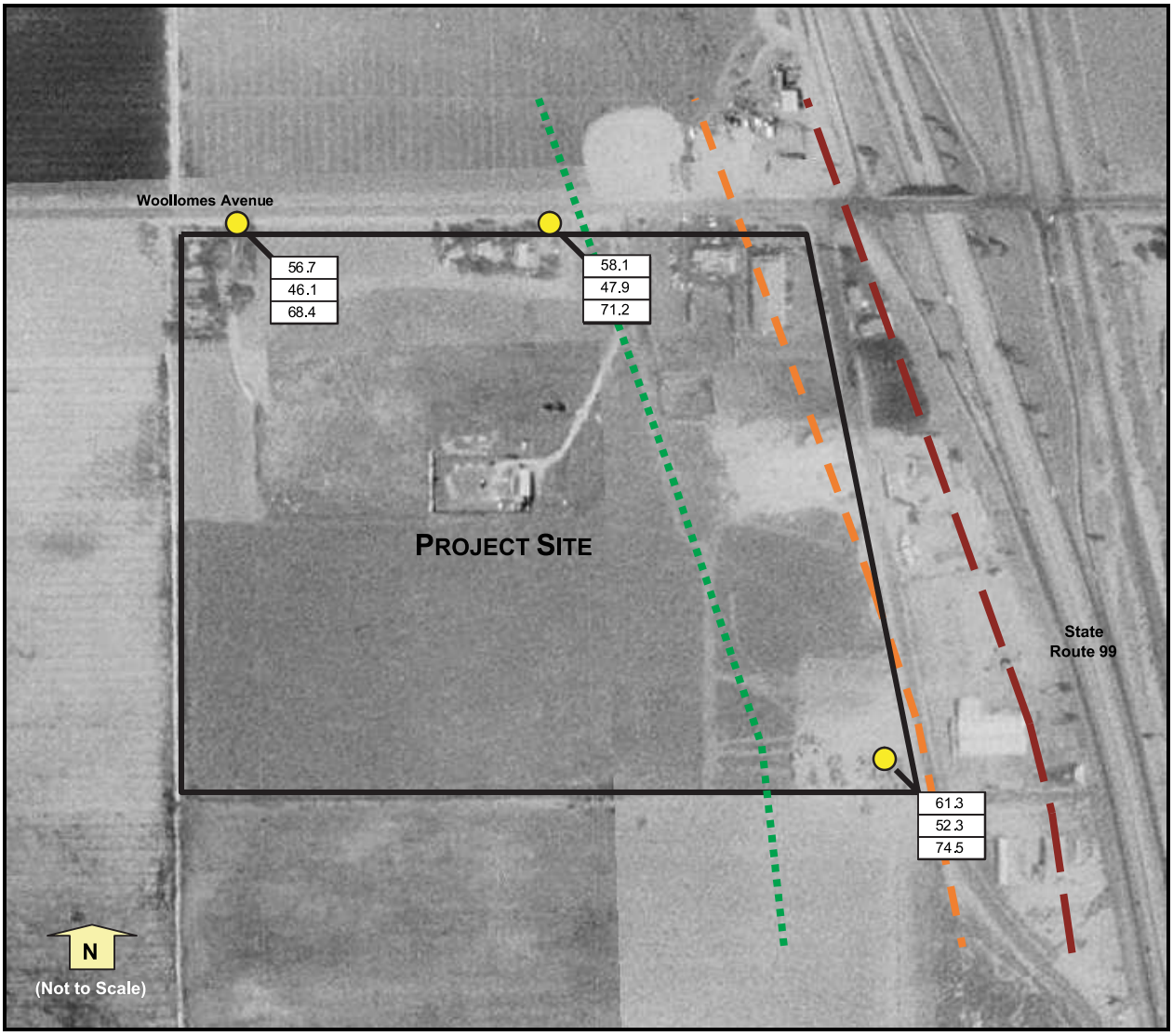

Image Source: CSIL 2005

Ambient Noise Monitoring Locations

L_{eq}	Average Energy Equivalent Noise Level
L_{min}	Minimum Noise Level
L_{max}	Maximum Noise Level

State Route 99 - Predicted Traffic Noise Contours*

- 60 dBA CNEL/L_{dn}
- 65 dBA CNEL/L_{dn}
- 70 dBA CNEL/L_{dn}

* Traffic noise contours were calculated using the FHWA Traffic Noise Prediction model, based on annual average daily traffic volumes obtained from the California Department of Transportation (2005). Noise contours represent bands of similar exposure and are not intended to represent absolute lines of demarcation. Actual noise levels will vary, from day to day, depending on local traffic conditions.

Source: Ambient, 2005

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FIGURE 3.10-2
EXISTING NOISE ENVIRONMENT

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a) In areas where the noise environment is acceptable, new development may be permitted without requiring noise mitigation.

b) For areas where the noise environment is conditionally acceptable, new development will be required to define the site's precise noise environment, and if needed incorporate appropriate mitigation into the design of the project to reduce noise exposure to the levels specified by the Noise Element.

c) For areas where the noise environment is conditionally acceptable, it may not be feasible for new development to provide appropriate mitigation to achieve compliance with applicable noise standards. In such cases, other, more noise tolerant land uses would be more appropriate for the site and its noise environment.

Policy 2 New development of noise-sensitive land uses shall not be permitted in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed the noise levels specified in Table 7-1 (**Table 3.10-2, State of California Land Use Compatibility Guidelines**) for the given land use, unless appropriate mitigation is provided.

Policy 3 Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated where feasible so as not to exceed the noise levels specified in Table 7-1 (**Table 3.10-2, State of California Land Use Compatibility Guidelines**).

Policy 4 New development of noise-sensitive land uses shall be consistent with the noise level standards of Table 7-2 (**Table 3.10-3, Maximum Allowable Noise Exposure-Transportation Noise Sources** below), following the implementation of appropriate mitigation measures.

Policy 5 New proposed stationary noise sources, or existing stationary noise sources which undergo modifications, shall not be permitted where the noise level exceeds the standards of Table 7-2 (**Table 3.10-3**, **Maximum Allowable Noise Exposure-Transportation Noise Sources** below). The Delano Municipal Code shall be amended to conform to these quantitative standards.

TABLE 3.10-3
MAXIMUM ALLOWABLE NOISE EXPOSURE
TRANSPORTATION NOISE SOURCES

Land Use	Outdoor Activity Areas L_{dn}/CNEL, dBA	Interior Spaces L_{dn}/CNEL, dBA
Residential (except temporary dwellings)	65*	45
Hotels & Motels	65*	45
Hospitals, Nursing and Personal Care	65*	45
Churches, Meeting Halls	--	45
Schools-Preschool to Secondary, College and University, Specialized Education and Training, Libraries and Museums	--	45

Source: City of Delano 2005

*Notes: *Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the boundary of planned or zoned noise-sensitive uses.*

Policy 6 The preferred method of noise control is thoughtful site design. Secondarily, noise control should be achieved through the use of noise barriers. Site and building design guidelines may include:

a) Commercial and industrial structures shall be designed so that noisy equipment is located far as possible from noise-sensitive land uses, and/or is shielded by structures.

b) Loading and unloading activities for commercial uses that are located near noise-sensitive uses should be conducted in an enclosed loading dock with a positive seal between the loading dock and trucks, and should be screened by a noise barrier and dense landscaping.

Policy 7 Prior to approval of the proposed development in a noise impacted area, or the development of an industrial, commercial or other noise generating land use in or near an area containing existing or planned noise-sensitive land uses, an acoustical analysis may be required if:

a) The existing or projected future noise exposure at the exterior of the buildings, which will contain noise sensitive uses, or within proposed outdoor activity areas (patios, decks, backyards, pool areas, recreation areas, etc.) may exceed 65 dBA Ldn (or CNEL).

b) Interior residential noise levels resulting from offsite noise may exceed 45 dBA.

TABLE 3.10-4
MAXIMUM ALLOWABLE NOISE EXPOSURE
STATIONARY NOISE SOURCES*

Noise Level Descriptor (dBA)	Daytime (7am to 10pm)	Nighttime (10pm to 7am)
Hourly Equivalent Sound Level (L_{eq})	55	50
Maximum Sound Level (L_{max})	75	70

Source: City of Delano 2005
*Notes: *Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the boundary of planned or zoned noise-sensitive uses.*

CITY OF DELANO ZONING ORDINANCE

The *Zoning Ordinance* includes additional provisions related to the control of noise. Chapter 20.12.120 establishes maximum allowable noise exposure levels for stationary sources associated with commercial and industrial land uses. In accordance with the City's *Zoning Ordinance*, all commercial and industrial uses shall be operated so that no loudspeakers, bells, gongs, buzzers, or other noise attention or attracting devices exceeds seventy (70) dBA in nonresidential areas or fifty-five (55) dBA in residential areas at any one time beyond the boundaries of the property.

3.10.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

In accordance with CEQA, project-related effects are evaluated to determine if they would result in a significant impact on the environment. Implementation of feasible mitigation measures is required to avoid or lessen any identified significant impacts. The criteria, or standards, used to determine the significance of impacts may vary depending on the nature of the project. Noise impacts resulting from the implementation of the proposed project could be considered significant if they cause any of the following to occur:

1) Short-term Construction Noise — Construction noise impacts would be considered significant if construction noise levels would result in a substantial temporary or periodic increase in ambient noise levels at nearby noise-sensitive receptors during noise-sensitive periods of the day. Increases in ambient noise levels during noise-sensitive periods of the day can result in increased levels of annoyance and potential sleep disruption. For purposes of this analysis, noise-sensitive periods of the day are considered to be between the hours of 7 p.m. and 7 a.m.

2) Long-term Stationary-Source Noise — Long-term stationary-source noise impacts would be considered significant if the proposed project would result in noise levels that would exceed applicable noise criteria of the City of Delano (**Table 3.10-4, Maximum Allowable Noise Exposure Stationary Noise Sources**) or result in a substantial permanent increase (i.e., 5 dBA, or greater) in ambient noise levels at existing noise-sensitive receptors. As previously discussed, a change in sound level of at least 5 dBA is required before any noticeable change in community response would be expected.

3) Long-term Traffic Noise — Long-term increases in traffic noise would be considered significant if implementation of the proposed project would result in a substantial permanent increase (i.e., 5 dBA, or greater) in ambient noise levels at existing noise-sensitive receptors.

4) Land Use Compatibility — Development of the proposed land uses would have a significant impact if predicted onsite noise levels at proposed onsite land uses would exceed applicable noise criteria of the State of California (**Table 3.10-2, State of California Land Use Compatibility Guidelines**) or City of Delano (**Table 3.10-3, Maximum Allowable Noise Exposure-Transportation Noise Sources**).

METHODOLOGY

This analysis is based primarily upon a noise impact assessment conducted by AMBIENT Air Quality & Noise Consulting in March 2007 for the RDEIR. The noise analysis included examination of existing literature, an ambient noise level survey and application of accepted traffic noise prediction models to predict changes in ambient noise levels resulting from implementation of the proposed project. Project-related noise components that were identified include automobile traffic, operational characteristics of proposed commercial uses and construction activities. Noise impacts for each of these sources are described below.

PROJECT IMPACTS AND MITIGATION MEASURES

Short-term Construction Noise

Impact 3.10-1 Depending on the activities being performed, as well as the duration and hours during which activities occur, construction-generated noise levels at nearby residences could result in increased levels of annoyance and sleep disruption for occupants of nearby residences. This impact is considered **potentially significant**.

Construction noise typically occurs intermittently and varies depending on the nature of the construction activities being performed. Noise generated by construction equipment, including excavation equipment, material handlers, and portable generators, can reach high levels for brief periods.

When noise levels generated by construction operations are being evaluated, activities occurring during the more noise-sensitive evening and nighttime hours are of particular concern. Because exterior ambient noise levels typically decrease during the late evening and nighttime hours as community activities (e.g., industrial activities, vehicle traffic) decrease, construction activities performed during these more noise-sensitive periods of the day can result in increased levels of annoyance and potential sleep disruption for occupants of nearby residential dwellings.

The U.S. Environmental Protection Agency (EPA) has found that the average noise levels associated with construction activities typically range from approximately 76 dBA to 84 dBA L_{eq}, with intermittent individual equipment noise levels ranging from approximately 75 dBA to more than 90 dBA L_{max} for brief periods. **Table 3.10-5, Noise Levels Generated by Typical Construction Equipment** below lists typical uncontrolled noise levels generated by individual pieces of construction equipment at a distance of 50 feet.

TABLE 3.10-5
NOISE LEVELS GENERATED BY TYPICAL CONSTRUCTION EQUIPMENT

Type of Equipment	Range of Sound Levels (dBA at 50 feet)
Jack hammer	75-85
Pneumatic tools	78-88
Pumps	68-80
Dozer	85-90
Tractor	77-82
Front-end loader	86-90
Hydraulic backhoe	81-90
Hydraulic excavator	81-90
Grader	79-89
Air compressor	76-86
Truck	81-87

Sources: EPA, 1971; FTA, 1995

Noise from localized point sources (such as construction sites) typically decreases by approximately 6 dBA with each doubling of distance from source to receptor. Given this noise attenuation rate and assuming a maximum noise level of 90 dBA L_{max} at 50 feet, the maximum predicted noise level at the nearest noise-sensitive receptor would be approximately 60 dBA L_{max}. Based on this same attenuation rate, maximum average-hourly

noise levels at this same receptor would be approximately 54 dBA L_{eq}, or less. Predicted noise levels would not exceed the City's noise standards (**Table 3.10-4, Maximum Allowable Noise Exposure Stationary Noise Sources)**. However, although predicted construction-generated noise levels are not anticipated to exceed City noise standards, activities occurring during the quieter nighttime hours could result in a substantial increase in ambient noise levels at nearby residential dwellings, the nearest of which is located approximately 0.3 mile south of the project site. Activities occurring during the quieter evening and nighttime hours, when people are more sensitive to noise, could result in increased levels of annoyance and sleep disruption to occupants of nearby residences. Therefore, noise-generating construction activities would be considered a **potentially significant impact**. Implementation of the following mitigation measures would reduce this impact to a **less than significant** level.

Mitigation Measures

MM 3.10-1a During the course of construction, the City of Delano shall require that the project applicant limit construction activities to the least noise-sensitive daytime hours of 7 a.m. to 7 p.m. Construction activities shall not be allowed on Sundays and legal holidays. These limitations shall be specified in all construction contracts and specifications entered into by the project applicant and/or its successors in interest.

MM 3.10-1b During the course of construction, the City of Delano shall require that the project applicant ensure that all construction vehicles or equipment, fixed or mobile, are equipped with properly operating and maintained mufflers and acoustical shields or shrouds, in accordance with manufacturers' recommendations.

Implementation of the above mitigation measures would limit construction activities to the less noise-sensitive periods of the day and would ensure that equipment is operated in accordance with manufacturers' recommendations to reduce noise generated by individual equipment. Implementation of these mitigation measures would ensure that construction activities would not adversely affect sensitive receptors in the vicinity of the project site.

Long-term Operational Noise Impacts – Stationary Noise Sources

Impact 3.10-2 Increases in stationary-source noise associated with proposed land uses would not exceed applicable noise standards nor result in a substantial increase in average daily noise levels at nearby receptors. This impact is considered **less than significant**.

The proposed project would include development of various commercial land uses, including two large anchor stores, retail shops, and restaurants. The large anchor stores

would include a Wal-Mart Supercenter and a home improvement store. The primary noise sources associated with the proposed project include parking lot activities, loading dock operations, and the operation of mechanical equipment, including trash compactors. Noise levels and resultant impacts associated with these sources are discussed separately, as follows:

Parking Lots

Major sources of noise from parking lot activity associated with the proposed project would include moving vehicles, starting engines, slamming doors, and people talking. The occasional sounding of car alarms can generate the loudest noise levels of approximately 90 dBA L_{max} at 10 feet. Assuming a maximum noise level of 90 dBA, predicted noise levels at the nearest noise-sensitive land use, located approximately 0.3 mile from the project site, would be less than 46 dBA L_{max} and would not exceed the City's most restrictive nighttime noise standard of 70 dBA L_{max}. Given the sporadic nature of parking lot noise and distance to the nearest noise-sensitive receptor (approximately 0.3 mile south of the project site), projected increases in average-hourly and average-daily noise levels at nearby receptors would not be anticipated.

Loading Docks

Loading docks are proposed along the southern façade of the major retail buildings (i.e., the proposed home improvement store and Wal-Mart Supercenter) along the southern property line of the project site. Noise from delivery trucks varies depending on truck type and delivery frequency. Based on data provided by the project applicant and a review of EIRs recently prepared for similar projects (i.e., Lowe's, Home Depot, and Wal-Mart) the daily number of delivery vehicles associated with such land uses can vary from day to day, ranging from a maximum of approximately 4 to 25 trucks per day. Onsite land uses would generate a total of approximately 50 delivery trucks/day (Coates Consulting 2006, Placer County 2005, and City of Lodi 2003).

Noise sources associated with loading dock operations are most commonly associated with delivery truck operations. For instance, based on measurements conducted for similar facilities, large diesel truck movements typically generate maximum noise levels of 60 to 70 dBA L_{max} at 150 feet. Smaller panel trucks and vans would generate noise levels of approximately 50 to 60 dBA L_{max} at 150 feet. Truck refrigeration equipment would generate a maximum noise level of approximately 67 to 70 dBA L_{max} at 150 feet. Additional sources of maximum single-event noise include backup beepers on forklifts, operation of roll-up doors, and pallet drops, which can reach levels of approximately 90 dBA L_{max} at 50 feet. Based on measurements conducted at similar facilities, averaging approximately two truck deliveries per hour, average-hourly noise levels at loading docks can reach approximately 60 dBA L_{eq} at 50 feet.

Based on the above noise levels, projected noise levels at the nearest noise-sensitive receptor (approximately 0.3 mile south of the project site), would be approximately 60 dBA L_{max} and 30 dBA L_{eq}, respectively. As a result, noise associated with loading dock operations would not exceed the City's more restrictive (nighttime) noise standards of 70 dBA L_{max} and 50 dBA L_{eq} at the nearest noise-sensitive receptor.

Auto Service Center

An automotive service center would be constructed as part of the proposed Wal-Mart Supercenter. Activities at the automobile service center have not yet been identified, but would generally occur during the daytime hours (e.g., 7 a.m. to 10 p.m).

The automobile service center operation includes the raising and lowering of vehicles on lifts, and the removal and replacement of vehicle tires. The principal tire center noise source would be the use of small hand-held pneumatic wrenches used to remove and install tires on vehicles. Other equipment operations such as lifts, compressed air nozzles, and tire changers would generate a lesser degree of noise impact. Typical noise levels for hand-held pneumatic wrenches average approximately 80 dBA at a distance of 50 feet (EPA 1971).

Assuming a maximum noise level of 80 dBA with service center doors open and an average noise attenuation rate of 6 dBA per doubling of distance from the source, predicted unobstructed outdoor noise levels at the nearest residence would be 60 dBA L_{max}, or less, for brief periods of time. Predicted average-hourly noise levels at the nearest residential dwelling would be less than 30 dBA L_{eq}. Predicted operational noise levels associated with the automotive service center, as perceived at the nearest residential dwellings, would not be anticipated to result in a noticeable increase in ambient daytime noise levels (i.e., 3 dBA or greater) and would be largely masked by vehicle traffic on area roadways. Predicted noise levels associated with the auto service center would not exceed the City's noise standards. In addition, because operation of the automotive service center would likely be limited to daytime hours, predicted increases in nighttime ambient noise levels would not be anticipated.

Mechanical Equipment and Trash Compactors

Mechanical equipment includes heating, ventilation, and air conditioning (HVAC) units and refrigeration equipment. External mechanical ventilation equipment is typically found on the rooftops of commercial uses and can generate noise levels of 60 to 70 dBA L_{eq} at 15 feet. Mechanical sources of maximum intermittent noise levels are most commonly associated with commercial land uses and include the operation of trash compactors. Trash compactors are typically located in the vicinity of the loading dock and can generate maximum noise levels of up to 75 dBA L_{max} at 50 feet, depending on the specific power

rating and enclosure characteristics of the compactor (Ambient Air Quality and Noise Consulting 2007).

Based on the above noise levels, projected noise levels at the nearest noise-sensitive land use would be less than 30 dBA L_{eq} and 45 dBA L_{max}, respectively. Thus, operational noise levels associated with mechanical equipment would not exceed the City's more restrictive (nighttime) noise standards of 50 dBA L_{eq} and 70 dBA L_{max} at the nearest noise-sensitive receptor.

Combined Stationary Source Noise Levels

The above-described noise sources would not individually result in noise levels in excess of the City's maximum intermittent daytime or nighttime noise standards of 75 and 70 dBA L_{max}, respectively, at the nearest noise-sensitive receptor. Assuming that onsite noise sources were to operate simultaneously within a 1-hour period, predicted average-hourly noise levels at the nearest noise-sensitive receptor would be approximately 36 dBA L_{eq}, or less. Predicted noise levels would not exceed the City's daytime or nighttime noise standards of 55 and 50 dBA L_{eq}, respectively. In addition, given the distance to the nearest noise-sensitive receptors (approximately 0.3 mile or greater) and in comparison to ambient noise levels, operation of stationary noise sources associated with the proposed land uses would not be anticipated to result in a substantial increase (i.e., 5 dBA, or greater) in average ambient noise levels at nearby noise-sensitive receptors. For these reasons, this impact is considered **less than significant**.

Long-term Operational Noise Impacts – Traffic Noise

Impact 3.10-3 Implementation of the proposed project would not result in a substantial increase in ambient traffic noise levels. As a result, this impact is considered **less than significant**.

The FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) was used to calculate traffic noise levels along affected roadways for existing and existing-plus-project conditions based on data obtained from the revised traffic analysis prepared for the proposed project in March 2007 by AMBIENT Air Quality & Noise Consulting. Input data used in the model included average daily traffic levels for nearby area roadways, fleet mixes (percentages of automobiles, medium-duty trucks, and heavy-duty trucks during daytime, evening, and nighttime hours), vehicle speeds, ground attenuation factors, and roadway widths. The project's contribution to the existing traffic noise levels along area roadways was determined by comparing predicted traffic noise levels for existing conditions (without the proposed project) and opening year conditions with the project in 2007, as well as near-term (2010) approved projects with and without the proposed project. The predicted noise levels for existing (2007) and opening year conditions are summarized in **Table 3.10-6, Predicted Traffic Noise Levels Existing Conditions. Table 3.10-7, Predicted Traffic Noise**

Levels Near Term (2010) Conditions summarizes near-term (2010) conditions with and without implementation of the proposed project. Resultant increases in traffic noise levels attributable to the proposed project for modeled roadway segments are also presented in these tables.

TABLE 3.10-6
PREDICTED TRAFFIC NOISE LEVELS
EXISTING CONDITIONS

Roadway Segments	Predicted Noise Level (dBA CNEL/L_{dn}) at 50 Feet from Near Travel Lane Centerline*		
	Existing (2007)		Predicted Increase
	Without Project	With Project	
Woollomes Avenue, Albany Street to Dover Parkway	60.52	64.20	3.68
Woollomes Avenue, Dover Parkway to Site Access	62.39	66.37	3.98
Woollomes Avenue, Site Access to Garzoli Avenue	62.62	67.88	5.26
Woollomes Avenue, Garzoli Avenue to State Route 99	65.41	69.16	3.75
Woollomes Avenue, State Route 99 to Lexington Street	64.54	66.49	1.95
Albany Street, Woollomes Avenue to 1st Avenue	60.83	63.95	3.12
Stradley Avenue, Woollomes Avenue to Schuster Avenue	58.19	59.49	1.30
Garzoli Avenue, Woollomes Avenue to Schuster Avenue	61.49	63.33	1.84
Garzoli Avenue, Schuster Avenue to Pond Road	58.93	61.94	3.01
Pond Road, Garzoli Avenue to SB State Route 99 Ramps	60.21	61.68	1.47

Source: AMBIENT Air Quality & Noise Consulting 2007

*Note: *Traffic noise levels were modeled using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) based on traffic information (e.g., average daily traffic, vehicle speeds, roadway width) obtained from the data prepared for this project. Modeling assumes no natural or human-made shielding (e.g., vegetation, berms, walls, buildings).*

In comparison to existing conditions, predicted increases in traffic noise levels along area roadway segments generated by the proposed project would range from approximately 1.3 to 5.3 dBA. Implementation of the proposed project would result in a substantial increase (5 dBA, or greater) in existing traffic noise levels along Woollomes Avenue, between Garzoli Avenue and the site access. In addition, along Woollomes Avenue, under existing, opening year, and near-term (2010) conditions, projected traffic noise levels would exceed the 65 dBA outdoor activity threshold for sensitive receptors as noted in **Table 3.10-3, Maximum Allowable Noise Exposure-Transportation Noise Sources**. As other development occurs in the area, the project's contribution to predicted future traffic noise levels along area roadways is anticipated to decrease. However, since no sensitive receptors would be located along Woollomes Avenue the predicted increases in ambient

noise levels associated with implementation of the proposed project would be considered a **less than significant impact**.

TABLE 3.10-7
PREDICTED TRAFFIC NOISE LEVELS
NEAR-TERM (2010) CONDITIONS

Roadway Segments	Predicted Noise Level (dBA CNEL/L_{dn}) at 50 Feet from Near Travel Lane Centerline*		
	Near Term (2010)		Predicted Increase
	Without Project	With Project	
Woollomes Avenue, Albany Street to Dover Parkway	61.36	64.58	3.22
Woollomes Avenue, Dover Parkway to Site Access	63.19	66.71	3.52
Woollomes Avenue, Site Access to Garzoli Avenue	63.36	68.12	4.76
Woollomes Avenue, Garzoli Avenue to State Route 99	66.05	69.44	3.39
Woollomes Avenue, State Route 99 to Lexington Street	65.87	68.31	2.44
Albany Street, Woollomes Avenue to 1st Avenue	61.80	64.45	2.65
Stradley Avenue, Woollomes Avenue to Schuster Avenue	58.93	60.04	1.11
Garzoli Avenue, Woollomes Avenue to Schuster Avenue	62.10	63.73	1.63
Garzoli Avenue, Schuster Avenue to Pond Road	59.63	62.30	2.67
Pond Road, Garzoli Avenue to SB State Route 99 Ramps	60.85	62.15	1.30

Source: AMBIENT Air Quality & Noise Consulting 2007

*Note: *Traffic noise levels were modeled using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) based on traffic information (e.g., average daily traffic, vehicle speeds, roadway width) obtained from the data prepared for this project. Modeling assumes no natural or human-made shielding (e.g., vegetation, berms, walls, buildings).*

Long-term Operational Noise Impacts – Exposure to Aircraft and Railroad Noise

Impact 3.10-4 Implementation of the proposed project could result in exposure to aircraft and railroad noise. This is considered a **less than significant** impact.

The project site is not located within the 60 dBA L_{dn}/CNEL noise contour zones of the nearby Delano Municipal Airport or the Southern/Union Pacific Railroad (Kern County 2004). Consequently, exposure to aircraft and railroad noise, as well as ground-borne vibration, is considered **less than significant**.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Noise Levels

Impact 3.10-5 Predicted noise levels at residential dwellings located along primarily affected roadways could potentially exceed the City's land use compatibility standards (**Table 3.10-2**), at nearby residential dwellings. As a result, this impact is considered **significant**.

Table 3.10-8, Predicted Cumulative (2030) Traffic Noise Levels summarizes the predicted noise levels for "Cumulative Without Project" and "Cumulative (2030) Plus Project" conditions and resultant increases in traffic noise levels attributable to the proposed project for primarily affected roadway segments located in the vicinity of the project site. Under "Cumulative (2030) Plus Project," predicted traffic noise levels along adjacent roadway segments would increase by approximately 0.21 to 1.75 dBA. The proposed project would not, in and of itself, contribute to a substantial increase (i.e., 5 dBA or greater) in predicted future traffic noise levels. However, the proposed project would contribute, on a cumulative basis, to predicted future noise levels at land uses located near primarily affected roadways that could potentially exceed the City's land use compatibility standards (**Table 3.10-3, Maximum Allowable Noise Exposure-Transportation Noise Sources**). As a result, the project's contribution to future cumulative noise levels would be considered a **significant impact**.

TABLE 3.10-8
PREDICTED TRAFFIC NOISE LEVELS
CUMULATIVE (2030) CONDITIONS

Roadway Segments	Predicted Noise Level (dBA CNEL/L_{dn}) at 50 Feet from Near Travel Lane Centerline*		
	Cumulative (2030)		Predicted Increase
	Without Project	With Project	
Woollomes Avenue, Albany Street to Dover Parkway	67.45	68.34	0.89
Woollomes Avenue, Dover Parkway to Site Access	71.13	71.81	0.68
Woollomes Avenue, Site Access to Garzoli Avenue	71.60	72.56	0.96
Woollomes Avenue, Garzoli Avenue to State Route 99	71.75	72.78	1.03
Woollomes Avenue, State Route 99 to Lexington Street	69.63	70.66	1.03
Albany Street, Woollomes Avenue to 1st Avenue	69.06	69.75	0.69
Stradley Avenue, Woollomes Avenue to Schuster Avenue	67.03	67.24	0.21
Garzoli Avenue, Woollomes Avenue to Schuster Avenue	62.87	64.62	1.75

Garzoli Avenue, Schuster Avenue to Pond Road	67.16	67.81	0.65
Pond Road, Garzoli Avenue to State Route 99	69.15	69.38	0.23

Source: AMBIENT Air Quality & Noise Consulting 2007

*Note: *Traffic noise levels were modeled using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) based on traffic information (e.g., average daily traffic, vehicle speeds, roadway width) obtained from the data prepared for this project. Modeling assumes no natural or human-made shielding (e.g., vegetation, berms, walls, buildings).*

Sound walls are typically the preferred method of mitigating exterior noise levels at noise-sensitive receptors. However, given that access to receptors located along primarily affected roadways would need to be maintained and openings in the barrier would not effectively block noise, construction of acoustically effective sound walls would not be considered feasible. No additional feasible mitigation measures have been identified to reduce this impact to a less than significant level; therefore, the cumulative impact is considered **significant and unavoidable**.

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Section 3.11
Public Services

This section of the RDEIR addresses existing public services and facilities within the City of Delano and evaluates the potential impacts to these services with implementation of the proposed project. Services examined for potential impacts include law enforcement, fire protection, parks and education. The analysis is based primarily on information contained in the *City of Delano General Plan* (City of Delano 2005) and *Development Cost and Fee Study* (City of Delano 2004).

3.11.1 EXISTING SETTING

The City of Delano provides law enforcement services and parks and recreation programs and facilities for the citizens of Delano. Fire protection is contracted out to the Kern County Fire Department. The Delano Union Elementary School District and the Delano Union High School District are the local public school districts that serve the City.

POLICE

The City of Delano is patrolled on a 24-hour basis by the City operated police force. The police department currently consists of 38 patrol officers, five reserve officers, five sergeants, and ten detectives. The department is located at 1022 12th Avenue, approximately two miles from the project site. The City operates under a mutual aid agreement with the Tulare and Kern County Sheriff's Departments. In 2006, the department responded to approximately 36,187 calls for service or about 3,015 per month. The Police Department's current level of staffing for the City's non-incarcerated 2003 population of approximately 36,378 results in a ratio of 1.0 equivalent officers per 1,000 residents, which does not meet the City's goal of providing a staffing ratio of 1.4 equivalent officers per 1,000 residents.

FIRE

The City of Delano contracts with the Kern County Fire Department (KCFD) for fire prevention and protection services. The KCFD is a full-service professional department for fire prevention and protection services. The KCFD staffs 45 full time fire stations and one seasonal station. The fire department is broken into six Battalions for operational management and oversight. Each Battalion covers a large geographical area and includes seven to nine fire stations. Battalion 3 includes Glenville, Woody, Lost Hills, Shafter, Wasco, McFarland, and Delano.

KCFD Station #34 and #37, located at 1001-12th and 132 West 11th Avenues, respectively, serve the City of Delano. Station #34 contains three engines and houses three fire fighters. It serves an area of approximately sixty square miles. Station 37 covers approximately 85 square miles and contains one engine, a four wheel drive patrol vehicle, and two firefighters. Both stations are located approximately two miles from the project site. The joint Kern County/Bakersfield City Dispatching Facility provides dispatch and emergency

communications for the City of Delano and unincorporated Kern County. More sophisticated services provided by the KCFD, such as hazardous materials response, technical and high angle rescue, arson investigation, helicopters and wildland dozers are available for dispatch to the Delano area upon request.

SCHOOLS

The Delano Union Elementary School District and the Delano Union High School District provide educational services. A developer fee justification report prepared by the Delano Union Elementary School and Delano High School District identified overcrowded conditions in all of Delano's schools. The District plans to reduce class sizes and relieve current overcrowding by enlarging existing sites and adding relocatable classrooms. Future student enrollment projections indicate new school sites will need to accommodate future development and increased student enrollment. Current and future expansions will be funded through the State of California, local property taxes and developer fees levied in accordance with State legislation.

PARKS AND RECREATION

The City of Delano provides parks and recreational facilities and services to the citizens of Delano. The City has thirty-five acres of parkland in its seven existing parks, which feature playgrounds, open space areas, and picnic shelters. The parks average three to eight acres in size. Other facilities provided to the community include tennis courts, lighted ball fields, a skatepark, basketball courts, a golf course, a pool, a gym and fitness center, two senior centers and racquetball courts. Another 184 acres have been designated in nine proposed park sites. The City park system is supplemented by the playing fields, tot lots and open space areas found on several elementary schools and two high schools in the community.

TRANSIT NETWORK

The City of Delano public transportation system provides responsive fixed route bus and demand responsive/reservation public transportation services to the City of Delano and the areas surrounding the City as discussed in *Section 3.12, Traffic and Circulation* of this EIR.

3.11.2 REGULATORY SETTING

School Facilities Act of 1998

The School Facilities Act of 1998, also known as SB 50, provides state funding for new school construction projects that can satisfy criteria for such funding, including eligibility due to growth, Division of State Architect plan approval and California Department of Education site approval. However, the Act also dramatically limits the maximum amount of impact fees which can be charged by school districts as mitigation for new residential,

commercial and industrial construction. The Act also prohibits local agencies from denying a development application on the basis of a person's refusal to provide school facilities mitigation that exceeds the fee amount and refusing to approve any legislative or adjudicative act on the basis that school facilities are inadequate.

CITY OF DELANO GENERAL PLAN AND ORDINANCES

Construction and maintenance of public services and utilities in the City of Delano is enabled and regulated by the City's General Plan and Municipal Ordinances. The following policies from the *City of Delano General Plan* (2005) are relevant regarding consideration of public services and facilities improvements:

Public Facility Improvement

Policy 5 Require the extension and construction of infrastructure to proposed developments according to adopted elements and master plans. The City shall use reimbursement agreements or other financing techniques to reimburse developments for any oversizing cost, which may be required.

Policy 9 Development fee credit may be given for public improvements made by a builder but shall not exceed the amount of fees.

Policy 10 Developers shall construct all tributary facilities necessary to connect major facilities, whether or not the major facilities have yet been constructed.

Safety Element

Objective B: Provide adequate fire protection services throughout the Delano Planning Area.

Policy 1 Promote and encourage adequate fire control within the Delano Planning Area.

a. Ensure that all sectors of the City maintain adequate water pressure and water supply for fire fighting purposes.

b. Maintain an effective and well-trained Fire Department that will protect the community from fire danger, meeting the Kern County Fire Department standard of one fire company for every 14,000 residents.

Objective C: Provide adequate law enforcement services to the City.

Policy 1 Maintain police staffing ratios of 2.0 equivalent officers for every 1,000 persons to the extent feasible. An equivalent officer includes non-sworn field staff.

3.11.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on CEQA Guidelines and previous standards used by the City. Public service impacts may be considered significant if implementation of the project will result in one or more of the following:

1) A need for a new or physically altered government facility, the construction of which could cause significant physical or environmental impacts, in order to maintain acceptable law enforcement or fire service levels;

2) An increased demand for additional police personnel, equipment or facilities that impairs the ability to maintain current service levels;

3) An increased demand for additional fire protection staff, equipment or facilities in excess of the ability of service providers to maintain an acceptable level of service;

4) Additional students of a quantity great enough to create physical overcrowding or other physical strain on existing school facilities;

5) An increased demand for park and recreational services, such that substantial physical deterioration of a park or facility would occur or be accelerated; and/or

6) Contributes significantly to any cumulative public service impact.

METHODOLOGY

The analysis of potential public services impacts is based upon the project applicant's plans, information supplied by the City of Delano, Kern County service providers and other technical documents.

PROJECT IMPACTS AND MITIGATION MEASURES

Law Enforcement Services

Impact 3.11-1 The proposed project will increase service demands for police patrol and incident response, but will not result in the need for new or physically altered governmental facilities. This is considered a **potentially significant** impact.

The City of Delano Police Department would provide law enforcement services to the project site. Due to the commercial nature of the proposed project, law enforcement services will increase due to calls typical of a regional shopping center, the late hours of operation, and proximity to State Route 99. Expected calls for service would originate from a wide variety of incidents including domestic violence, lost children, disturbances, automobile theft or theft of items inside of automobiles, shoplifting and fraud, traffic incidents including accidents and drunk driving, loitering, and armed robbery. Additionally, the location of the proposed project adjacent to State Route 99 may attract crime due to the relatively easy and anonymous entry and escape for out of town criminals. According to the City of Delano Police Department, the area will need to be patrolled 24-hours per day. The City of Delano Police Department recorded an average of 93 incident reports per year in 2004 and 2005 for a similar commercial center, an existing K-Mart, located in the City of Delano. Based on this record, the City of Delano Police Department estimates the proposed project would generate an average of 300+ reports per year (Written Communication from the Chief of Police to the City Manager, January 18, 2005).

However, the increase in service demands would not require construction of a new or physically altered government facility to meet current service levels. The City of Delano charges development impact fees to off-set the cost of providing additional police protection facilities and equipment brought about by new development. Ordinance No. 928 amended the City of Delano Municipal Code, allowing impact fees to be established by resolution. Resolution No. 2004-97 adopted the current impact fee structure, which incorporated police facilities fees of $1,010 per gross development acre for commercial uses. Standard development impact fees would provide funds for the acquisition of additional equipment, such as patrol cars. However, given the existing officer-to-population ratio of approximately 1.0 officer for every 1,000 residents, the use of specific security features to reduce service calls shall be required to reduce law enforcement impacts to a **less than significant** level.

Mitigation Measure

MM 3.11-1 The project applicant shall maintain on-site security personnel during all hours of operation in order to respond to minor incidents.

The use of on-site security personnel would prevent crime and respond to minor incidents such as lost vehicles and minor crimes. This measure would limit police response to major crimes against persons or property and reduce service demands to a **less than significant** level.

Fire Protection

Impact 3.11-2 The proposed project will increase the demand for fire protection services. However, the proposed project would not result in the need for new or physically altered governmental facilities. This is considered a **less than significant** impact.

The Kern County Fire Department would provide fire protection services to the project site. Emergency response to the project site is dependent upon adequate emergency access and water flows for fire protection services. There are two stations in Delano, Station #34 and Station #37, which are both located approximately two miles from the project site. These stations have a response time of roughly four minutes to the project site. According to the Kern County Fire Department, the Fire Department has no concerns regarding the provision of fire protection services to the project site (Personal Communication with Capt. Benny Wofford on October 12, 2005).

The proposed project will have to meet all state and local codes for providing adequate fire flows, fire sprinklers, emergency vehicle access and other fire prevention requirements. The City of Delano charges development impact fees to off-set the cost of providing additional fire protection facilities and equipment brought about by new development. Ordinance No. 928 amended the City of Delano Municipal Code, allowing impact fees to be established by resolution. Resolution No. 2004-97 adopted the current impact fee structure, which incorporated fire facilities fees of $2,225 per gross development acre for commercial uses. Payment of these fees would ensure that the proposed project would have a **less than significant** impact on fire protection services.

Schools

Impact 3.11-3 The proposed project will generate employment opportunities, which may attract additional residents with school-age children to Delano. This is considered a **less than significant** impact.

The proposed project will not directly result in an increase in residents due to the commercial nature of the development. New jobs created as a result of the proposed project may attract individuals and families with school-age children to Delano and result in an indirect impact on school facilities. The proposed project is estimated to employ approximately 480 people.

As of December 2005, the State of California had a 4.8 percent unemployment rate, Kern County had an 8.1 percent unemployment rate, and Tulare County was rated as 9.6 percent. The City of Delano experienced a 21.9 percent unemployment rate during December 2005. Although the creation of employment opportunities may result in the migration of future employees to the City of Delano, given the existing unemployment situation in the City of Delano, existing residents or residents in the surrounding communities would likely fill most of these positions.

Any increase in population is expected to be minimal and the potential increase in children attending schools in Delano as a result of the proposed project is not anticipated to be great enough to generate the need for additional school facilities. The proposed project will also be subject to development impact fees collected by the Delano Union Elementary School District and the Delano Union High School District, in accordance with the provisions of the State Education Code and School Facilities Act of 1998; therefore, the impact is considered **less than significant**.

Parks and Recreation

Impact 3.11-4 The proposed project will generate employment opportunities, which may attract additional residents to Delano and result in additional demand for parks and recreation facilities. This is considered a **less than significant** impact.

New jobs created by the proposed project may increase the population of Delano. However, any increase in population is expected to be minimal and is not anticipated to result in demand for additional parks and recreation facilities; therefore, the impact is considered **less than significant**.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Public Services and Facilities

Impact 3.11-5 The proposed project, in addition to anticipated cumulative development in the project vicinity, may result in the need for increased public services and facilities. These impacts are considered to be **less than significant**.

The proposed project's contribution to cumulative public services and facilities impacts will be addressed by payment of all applicable development impact fees, which would also be assessed on any future development in the City of Delano. As a result, the impacts associated with providing facilities for cumulative development are considered **less than significant**. No mitigation is required.

REFERENCES/DOCUMENTATION

City of Delano. *Development Cost and Fee Study*. September, 2004.

City of Delano. *General Plan*. Adopted December 5, 2005.

City of Delano. *Notice of Preparation of a Draft Environmental Impact Report*. January 16, 2005.

Governor's Office of Planning and Research, State of California. *Guidelines for Implementation of the California Environmental Quality Act,* as amended. 2005.

Kern County Fire Department. Official website. www.co.kern.ca.us/fire.

Mendenhall, Dale. Chief of Police, City of Delano. Memo to Abdel Salem, Delano City Manager Re: Impact on Law Enforcement—Delano Marketplace. January 18, 2006.

Wankum, John. City Engineer, City of Delano. Engineering Comments. January 18, 2006.

Wofford, Capt. Benny. Kern County Fire Department. Personal Communication. October 12, 2005.

Section 3.12
Traffic and Circulation

This section of the RDEIR examines potential traffic and circulation impacts resulting from the proposed project based on a traffic impact analysis prepared in April 2007 by Peters Engineering Group for the City of Delano. The traffic impact analysis evaluated the following peak hour scenarios: "Existing" conditions, "Existing Plus Opening Year (2007) Approved Projects" conditions; "Existing Plus Opening Year (2007) Approved Projects Plus Project" conditions (hereinafter referred to as "Opening Year (2007) Project" conditions); "Existing Plus Near-Term (2010) Approved Projects" conditions; "Existing Plus Near-Term (2010) Approved Projects Plus Project" conditions (hereinafter referred to as "Near-Term (2010) Project" conditions); and "Cumulative (2030) Project" conditions. The purpose of this section of the RDEIR is to present the salient discussions, conclusions, and recommendations contained in the traffic report, in a manner which is succinct and accessible to the lay reader. For detailed supporting analysis, the reader is referred to the revised traffic impact analysis in Appendix J of this RDEIR.

3.12.1 EXISTING SETTING

The project site is served by a circulation system that is illustrated in **Figure 3.12-1, Study Intersections and Road Segments**. The main roadways serving the project site are discussed below.

ROADWAY NETWORK

State Route 99 (SR 99) extends north-south through the center of City of Delano and is a major freeway connection between Northern and Southern California. The freeway provides for regional movement and inter-regional access through the Central Valley from Bakersfield to Sacramento. SR 99 is a four-lane divided freeway with access to the proposed project site provided at the Woollomes Avenue interchange. Caltrans is planning to upgrade SR 99 to a six-lane, divided freeway.

Woollomes Avenue is a two-lane, undivided arterial that runs east-west along the northern boundary of the project site. According to the recently adopted *City of Delano General Plan* (City of Delano 2005), arterials shall be developed with a minimum 110-foot right-of-way and incorporate four travel lanes, a two-way left center turn lane or median, and parking. Where the Public Works Director determines that a 110-foot right-of-way is not required to meet applicable level of service standards, arterials may be developed within a 90-foot right-of-way, eliminating either the center median or on-street parking. The City of Delano currently does not have an arterial street developed to full arterial standards.

Garzoli Avenue is a two-lane, undivided collector street that forms the eastern boundary of the project site. Collectors are currently constructed on 60-foot to 80-foot right-of-ways with one lane in each direction and parking on both sides; however, Garzoli Avenue is proposed to be an arterial street in the recently adopted *City of Delano General Plan* (2005).

Albany Street/Stradley Avenue is a north-south, two-lane, undivided arterial that intersects Woollomes Avenue west of the project site. This road is named Albany Street north of Woollomes Avenue and Stradley Avenue south of Woollomes Avenue.

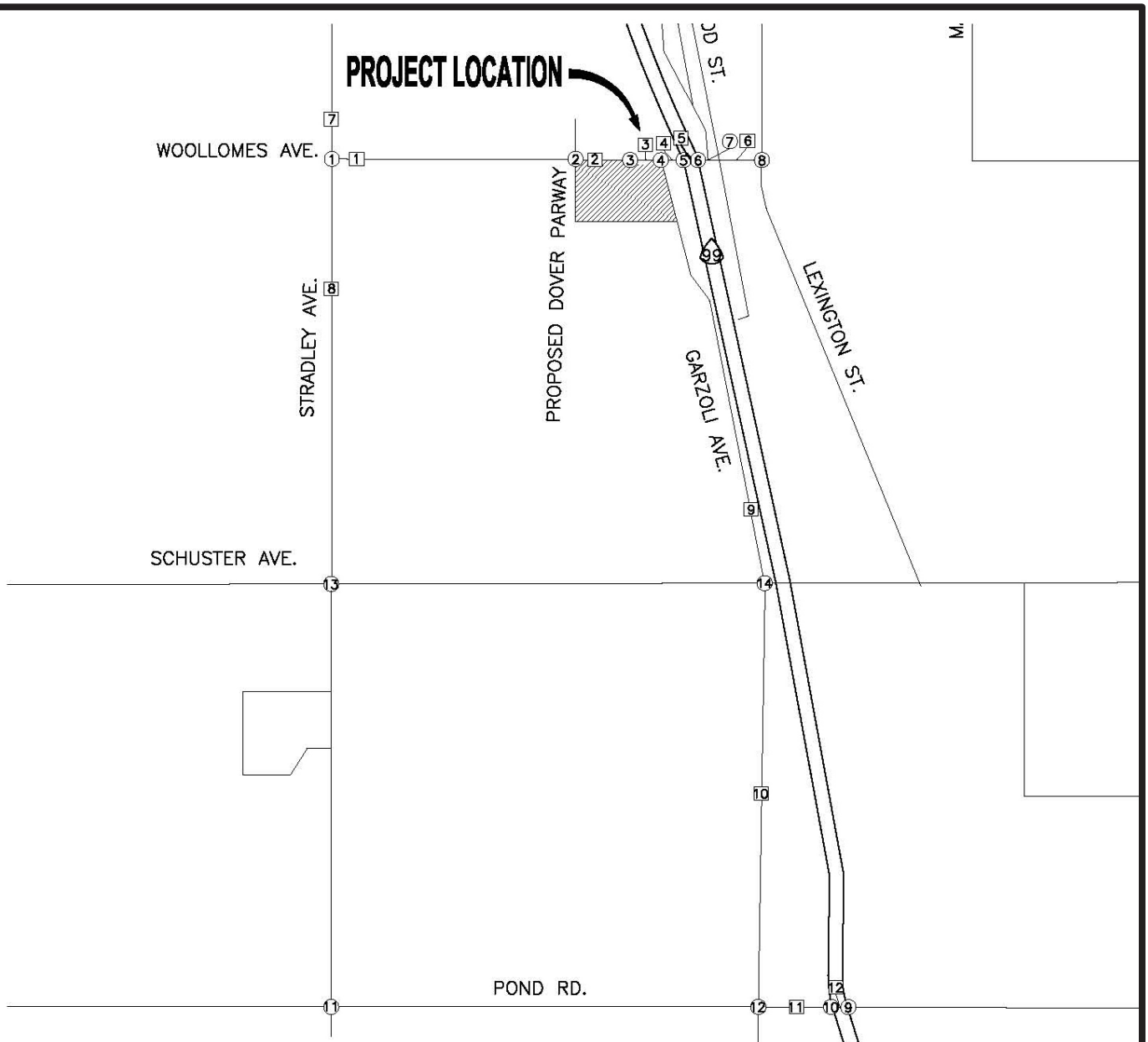
Pond Road is an east-west, undivided arterial that intersects Stradley Avenue southwest of the project site. This road also provides access to SR 99.

INTERSECTIONS AND ROADWAY SEGMENTS

For the purpose of the traffic impact study, the operations of 14 key intersections and 12 road segments were evaluated during the morning (AM), evening (PM), and Weekend peak hours. The intersections and segments are illustrated in **Figure 3.12-1, Study Intersections and Road Segments**. Existing lane configurations are illustrated in **Figure 3.12-2, Existing Lane Configuration**.

Intersections

1) Woollomes Avenue/Albany Street—Stradley Avenue
2) Woollomes Avenue/Dover Parkway
3) Woollomes Avenue/Site Access
4) Woollomes Avenue/Garzoli Avenue
5) Woollomes Avenue/State Route 99 Southbound On-Ramp
6) Woollomes Avenue/State Route 99 Northbound On-Ramp
7) Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street)
8) Woollomes Avenue/Lexington Street
9) Pond Road/State Route 99 Northbound On-Ramp
10) Pond Road/State Route 99 Southbound On-Ramp
11) Pond Road/Stradley Avenue
12) Pond Road/Garzoli Avenue
13) Schuster Road/Stradley Avenue
14) Schuster Road/Garzoli Avenue



Road Segments

1. Woollomes Avenue – Albany to Dover
2. Woollomes Avenue – Dover to Site Access
3. Woollomes Avenue – Site Access to Garzoli
4. Woollomes Avenue – Garzoli Avenue to SR 99 Southbound Ramps
5. Woollomes Avenue – SR 99 Southbound Ramps to Northbound Ramps
6. Woollomes Avenue – SR 99 Northbound Ramps to Lexington Street
7. Albany Avenue – Woollomes to 1st Avenue
8. Stradley Avenue – Woollomes to Schuster
9. Garzoli Avenue – Woollomes to Schuster
10. Garzoli Avenue – Schuster to Pond
11. Pond Road – Garzoli to State Route 99 Ramps
12. Pond Road - SR 99 Southbound Ramps to Northbound Ramps

Intersections

1. Woollomes Avenue / Albany Street-Stradley Avenue
2. Woollomes Avenue / Dover Parkway
3. Woollomes Avenue / Site Access
4. Woollomes Avenue / Garzoli Avenue
5. Woollomes Avenue / Southbound State Route 99 Ramps
6. Woollomes Avenue / Northbound State Route 99 On Ramp
7. Woollomes Avenue / Northbound State Route 99 Off Ramp/High Street
8. Woollomes Avenue / Lexington Street
9. Pond Road / Northbound State Route 99 Ramps
10. Pond Road / Southbound State Route 99 Ramps
11. Pond Road / Stradley Avenue
12. Pond Road / Garzoli Avenue
13. Schuster Road / Stradley Avenue
14. Schuster Road / Garzoli Avenue

Source: Peters Engineering Group

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FIGURE 3.12-1
STUDY INTERSECTIONS AND ROAD SEGMENTS

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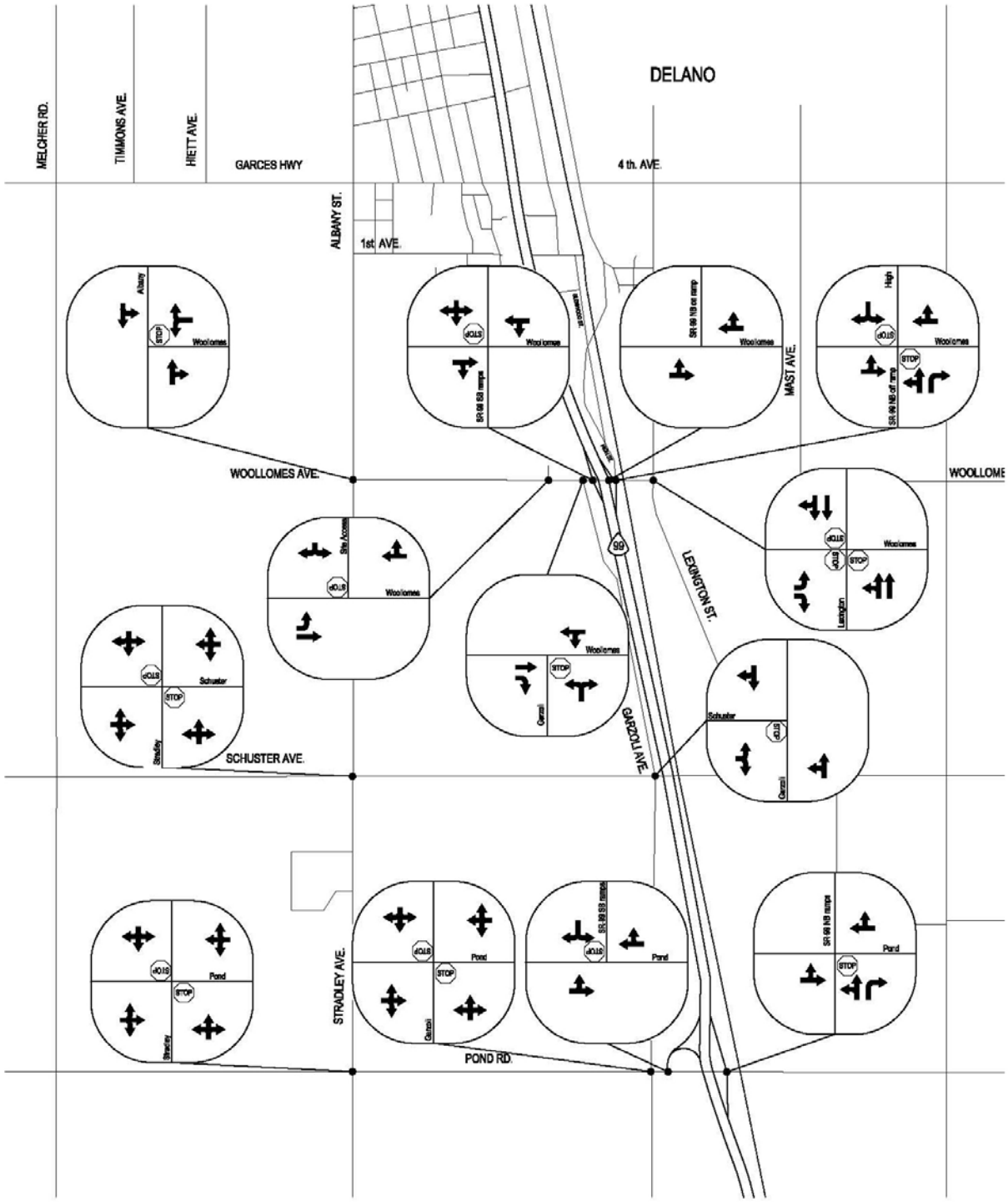

Source: Peters Engineering Group

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FIGURE 3.12-2
EXISTING LANE CONFIGURATION

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Roadway Segments

1) Woollomes Avenue – Albany Street to Dover Parkway
2) Woollomes Avenue – Dover Parkway to Site Access
3) Woollomes Avenue – Site Access to Garzoli Avenue
4) Wollomes Avenue – Garzoli Avenue to State Route 99 Southbound Ramps
5) Woollomes Avenue – State Route 99 Southbound Ramps to Northbound Ramps
6) Woollomes Avenue – State Route 99 Northbound Ramps to Lexington Street
7) Albany Street – Woollomes Avenue to 1st Avenue
8) Stradley Avenue – Woollomes Avenue to Schuster Avenue
9) Garzoli Avenue – Woollomes Avenue to Schuster Avenue
10) Garzoli Avenue – Schuster Avenue to Pond Road
11) Pond Road – Garzoli Avenue to State Route 99 On- and Off-Ramps
12) Pond Road – State Route 99 Southbound Ramps to Northbound Ramps

PROJECT SITE SETTING

Intersection Level of Service Operations

Level of Service (LOS) ratings are qualitative descriptions of intersection operations and are reported using an "A" through "F" letter rating system to describe travel delay and congestion, with LOS A representing the best operating conditions, and LOS F the worst. Level of Service characteristics for unsignalized and signalized intersections is presented below in **Tables 3.12-1, Level of Service for Unsignalized Intersections** and **3.12-2, Level of Service Characteristics for Signalized Intersections**.

TABLE 3.12-1
LEVEL OF SERVICE (LOS) CHARACTERISTICS FOR UNSIGNALIZED INTERSECTIONS

LOS	Description	Average Control Delay (seconds/vehicle)
A	Little or no delay	0-10
B	Short traffic delays	>10-15
C	Medium traffic delays	>15-25
D	Long traffic delays	>25-35
E	Very long traffic delays	>35-50
F	Excessive traffic delays	>50

Source: Highway Capacity Manual 2000

TABLE 3.12-2
LEVEL OF SERVICE (LOS) CHARACTERISTICS FOR SIGNALIZED INTERSECTIONS

LOS	Description	Control Delay per Vehicle (seconds/vehicle)
A	Uncongested operations; all queues clear in a single cycle.	≤10
B	Very light congestion; an occasional phase is fully utilized.	>10-20
C	Light congestion; occasional queues on approaches.	>20-35
D	Significant congestion on critical approaches, but intersection is functional. Vehicles required to wait through more than one cycle during short peaks. No long-standing queues formed.	>35-55
E	Severe congestion with some long-standing queues on critical approaches. Traffic queue may block nearby intersection(s) upstream of critical approach(es).	>55-80
F	Total breakdown, significant queuing.	>80

Source: Highway Capacity Manual 2000

Roadway Level of Service Operations

Road segment LOS ratings are based on tables developed by the Florida Department of Transportation. Specifically, the table entitled "Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas" was utilized in this analysis. This table is included in the appendix of the Traffic Impact Study in Appendix J of this RDEIR. Characteristics of specific ratings are listed in the table below.

TABLE 3.12-3
LEVEL OF SERVICE (LOS) CHARACTERISTICS & THRESHOLDS FOR ROADWAYS

LOS	Description	Volume Threshold			
		1 Lane Undivided	1 Lane Divided	2 Lane Divided	3 Lane Divided
A	Primarily free flow operations	-	-	-	-
B	Reasonable unimpeded operations, ability to maneuver only slightly restricted	-	-	-	-
C	Stable operations, ability to maneuver and select operating speed affected	≤480	≤504	≤1,120	≤1,740
D	Unstable flow, speeds and ability to maneuver restricted	481 - 760	505 - 798	1,121 - 1,620	1,741 - 2,450
E	Significant delays, flow quite unstable	761 – 810	799 - 850	1 621 - 1,720	2,451 - 2,580
F	Extremely slow speeds	>810	>851	>1,720	>2,580

Source: Peters Engineering Group 2007

TRANSIT NETWORK

The City of Delano public transportation system provides responsive fixed route bus and demand responsive/reservation public transportation services to the City of Delano and the areas surrounding the City. The fixed route system features three routes and operates Monday through Friday from 6:30 a.m. to 5:40 p.m. and Saturday from 9:00 a.m. to 5:00 p.m. All fixed route vehicles are equipped with handicap lifts to assist physically challenged persons. No routes currently serve the project area. Greyhound provides regional transportation service, with access to Bakersfield and Fresno and points beyond.

BICYCLE AND PEDESTRIAN FACILITIES

Currently, the City of Delano does not have any designated bicycle routes. A Draft Bicycle Plan was prepared for the City in 1980, but has never been formally adopted. Bicycle travel is discouraged on the City's arterial streets due to high traffic volumes. Pedestrian facilities in the City are limited to sidewalks, crosswalks and pedestrian crossing lights. There are no sidewalks along the project frontage; however, the Home Depot located across Woollomes Avenue from the project site includes a sidewalk along the site frontage.

Existing Conditions

Existing traffic volumes were determined by the independent traffic counting firm of Southland Car Counters. Southland performed manual turning movement counts at the study intersections, which are included in Appendix B of the Traffic Impact Study, which is Appendix J of the RDEIR. Where the intersections are controlled by one-way or two-way stop signs with the major street required to stop, the LOS for the side street with the greatest delay is presented. The total existing volume along Woollomes Avenue has been divided to reflect the proposed roadway segments. The overall LOS is not defined by the *Highway Capacity Manual* for this condition. The study time periods include the weekday AM and PM peak hours, which occur between 7:00 and 9:00 AM and between 4:00 and 6:00 PM; and weekend peak hours, which occur on Saturday between 12:00 and 3:00 PM. The peak hour scenarios were analyzed for the "Existing" conditions.

Intersection Level of Service

The results of the intersection LOS calculations for "Existing" conditions are shown below in **Table 3.12-4, Intersection Level of Service Under Existing Conditions.** All 13 existing intersections (there is no Woollomes Avenue/Dover Parkway intersection under "Existing" conditions) currently operate at acceptable levels of service better than or equal to the allowable LOS "C" standard.

TABLE 3.12-4
INTERSECTION LEVEL OF SERVICE UNDER EXISTING CONDITIONS

Intersections	Existing Traffic Control	Level of Service		
		AM	PM	Weekend
Woollomes Avenue/Albany Street	OWSC (WB)	A	A	A
Woollomes Avenue/Site Access	OWSC (SB)	B	A	A
Woollomes Avenue/Garzoli Avenue	OWSC (NB)	A	B	B
Woollomes Avenue/State Route 99 SB Ramps	OWSC (SB)	B	C	C
Woollomes Avenue/State Route 99 NB On-Ramp	No control	A	A	A
Woollomes Avenue/State Route 99 NB Off-Ramp (High Street)	TWSC (NB, SB)	B	C	B
Woollomes Avenue/Lexington Street	AWSC	A	A	A
Pond Road/State Route NB Ramps	OWSC (SB)	A	A	-
Pond Road/State Route 99 SB Ramps	OWSC (NB)	A	A	-
Pond Road/Stradley Avenue	TWSC (NB, SB)	B	B	-
Pond Road/Garzoli Avenue	TWSC (NB, SB)	B	B	-
Schuster Road/Stradley Avenue	TWSC (NB, SB)	A	A	-
Schuster Road/Garzoli Avenue	OWSC (EB)	A	A	-

Source: Peters Engineering Group 2007

Notes: OWSC = One-Way Stop Control (Direction of stop-controlled approach); TWSC = Two-Way Stop Control (Direction of stop-controlled approaches); NB = Northbound; SB = Southbound; EB = Eastbound; and WB = Westbound

Roadway Segment Level of Service

The results of the roadway segment LOS calculations for "Existing" conditions are shown below in **Table 3.12-5, Roadway Segment Level of Service Under Existing Conditions.** All 12 existing roadway segments currently operate at acceptable levels of service better than or equal to the allowable LOS "C" standard.

TABLE 3.12-5
ROADWAY SEGMENT LEVEL OF SERVICE UNDER EXISTING CONDITIONS

Road Segment and Direction		Lanes & Median	AM		PM		Weekend	
			Vol	LOS	Vol	LOS	Vol	LOS
WOOLLOMES AVENUE BETWEEN:								
Albany Street and Dover Parkway	EB	1U	122	C	89	C	65	C
	WE	1U	110	C	110	C	72	C
Dover Parkway and Site Access	EB	1U	122	C	89	C	65	C
	WE	1U	110	C	110	C	72	C
Site Access and Garzoli Avenue	EB	1U	117	C	163	C	151	C
	WE	1U	118	C	134	C	136	C
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	164	C	274	C	193	C
	WB	1U	172	C	226	C	155	C
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	130	C	239	C	225	C
	WB	1U	257	C	382	C	308	C
NB SR 99 Ramps and Lexington Street	EB	1U	218	C	285	C	201	C
	WB	1U	155	C	230	C	148	C
ALBANY STREET/STRADLEY AVENUE BETWEEN:								
Schuster Road and Woollomes Avenue	NB	1U	52	C	60	C	87	C
	SB	1U	49	C	46	C	82	C
Woollomes Avenue and 1st Street	NB	1U	88	C	116	C	107	C
	SB	1U	83	C	70	C	95	C
GARZOLI AVENUE BETWEEN:								
Pond Road and Schuster Road	NB	1U	61	C	70	C	-	-
	SB	1U	34	C	74	C	-	-
Schuster Road and Woollomes Avenue	NB	1U	85	C	124	C	71	C
	SB	1U	63	C	105	C	63	C
POND ROAD BETWEEN:								
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	82	C	113	C	-	-
	WB	1U	93	C	96	C	-	-
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	81	C	63	C	-	-
	WB	1U	79	C	102	C	-	-

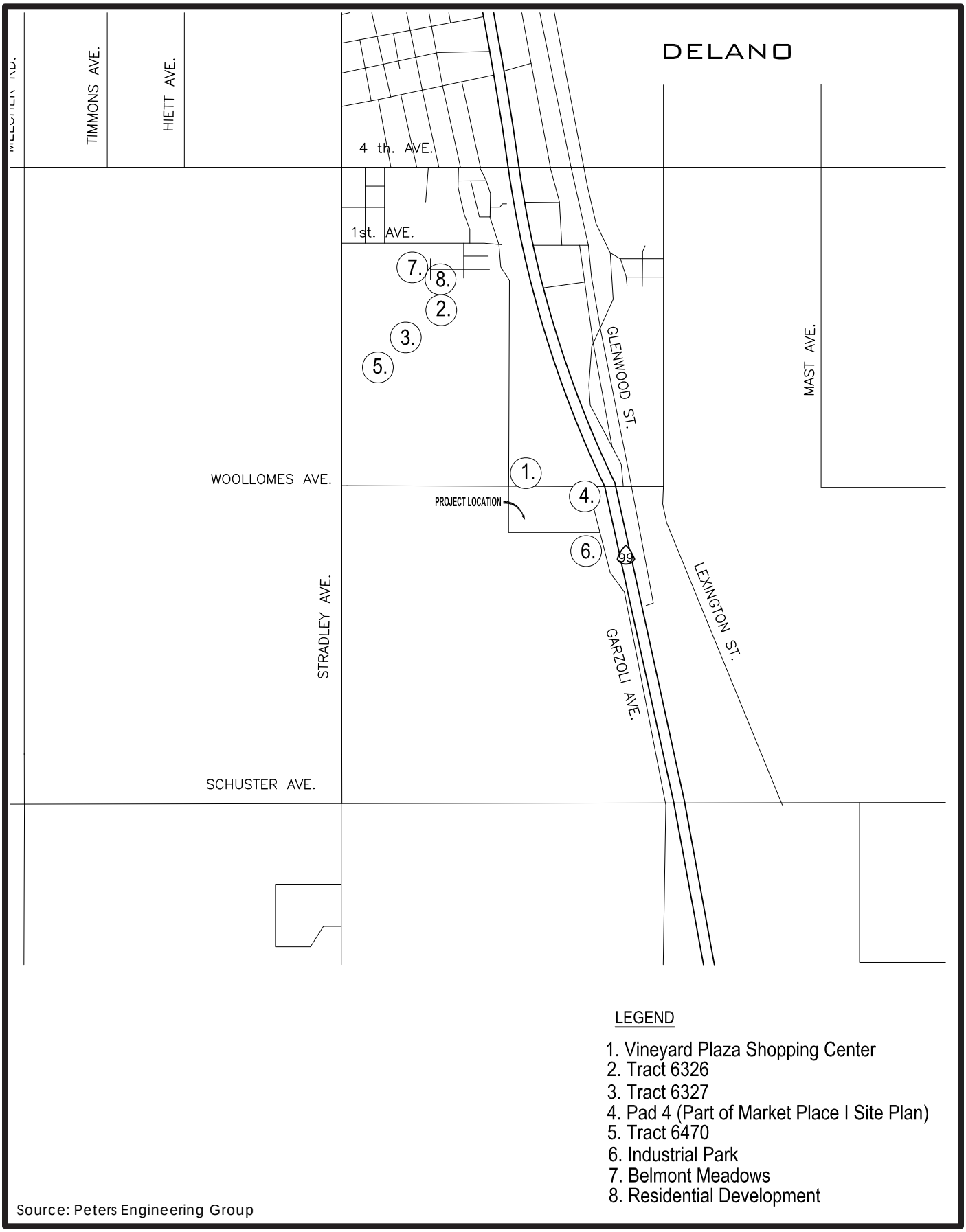
Source: Peters Engineering Group 2007

Notes: Vol. – Volume; U – Undivided road; EB – Eastbound; WB – Westbound; NB – Northbound; SB – Southbound.

Existing Plus Opening Year (2007) Approved Projects

Approved Projects

The traffic volumes expected to be generated by approved projects that would use the roadway segments and intersection in the study roadway network are included in the analyses. **Table 3.12-6, Approved Projects** provides a list of the nine approved projects in the vicinity of the project site that are expected use the area roadways or roadway network. According to the City of Delano, the following approved projects are anticipated to be completed by 2007 and are included in both "Opening Year" scenarios: Delano Vineyard Plaza Phase I Shopping Center; Ennis Homes Residential Subdivision (Residential Tract 6326); Ennis Homes Residential Subdivision (Residential Tract 6327); Pad 4 of the Delano Marketplace (A conditional use permit was approved by the City of Delano on February 21, 2006); and the Kern County Housing Authority/Self-Help Enterprises project. Three additional projects are anticipated to be completed by 2010 and therefore are included in the "Near-Term" scenarios. The "Near-Term" approved projects include: Pacific Holt Corporation Residential Subdivision (Tract 6470); Commercial Industrial Parcels (Millenium III); and Belmont Meadows Apartments. The locations all of the approved projects are shown on **Figure 3.12-3, Approved Projects Location Map**.



Source: Peters Engineering Group

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Figure 3.12-3
Approved Projects Location Map

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TABLE 3.12-6
APPROVED PROJECTS

Project	ITE Code	Units	Peak Hour Traffic Volumes						Weekday Traffic Volumes
			AM		PM		Weekend		
			Enter	Exit	Enter	Exit	Enter	Exit	
Vineyard Plaza Phase I	820	58,342	37	24	106	114	151	140	2,506
Ennis Homes Residential Subdivision (Tract 6326)	210	137	26	78	88	52	70	60	1,312
Ennis Homes Residential Subdivision (Tract 6327)	210	128	25	73	82	48	65	56	1,226
Delano Marketplace Pad 4	934	3,176	87	83	58	53	96	93	1,576
Delano Marketplace Pad 4	814	4,005	7	9	14	18	14	18	210
Delano Marketplace Pad 4	932	3,176	20	18	22	14	34	31	404
Kern County Housing Authority/Self-Help Enterprises	210	84	16	47	54	31	43	36	804
Opening Year Subtotals			**218**	**332**	**424**	**330**	**473**	**434**	**8,038**
Pacific Holt Corporation (Tract 6470)	210	165	31	93	105	62	84	72	1,580
Commercial Industrial Parcels (Millenium III LLC)	110	17.65	111	23	29	100	15	3	916
Belmont Meadows Apartments	221	70	7	26	27	15	9	33	462
Totals			**367**	**474**	**585**	**507**	**581**	**542**	**10,996**

Source: Peters Engineering Group and City of Delano 2007

Notes: A conditional use permit was approved for Pad #4 by the City of Delano on February 21, 2006, however this pad is incorporated herein to evaluate the overall impacts of the Delano Marketplace as described herein. This component of the site plan is included in the Opening Year (2007) Plus Project analysis.

Intersection Level of Service

The results of the intersection LOS calculations for "Existing Plus Opening Year (2007) Approved Projects" conditions anticipated to be completed by December 2007 (the anticipated completion of the proposed project) are shown below in **Table 3.12-7, Intersection Level of Service Under Existing Plus Opening Year Approved Project (2007) Conditions.**

TABLE 3.12-7
INTERSECTION LEVEL OF SERVICE UNDER
EXISTING PLUS OPENING YEAR APPROVED PROJECTS (2007) CONDITIONS

Intersections	Level of Service		
	AM	PM	Weekend
Woollomes Avenue/Albany Street	A	A	B
Woollomes Avenue/Dover Parkway	B	B	B
Woollomes Avenue/Site Access	B	B	B
Woollomes Avenue/Garzoli Avenue	B	B	B
Woollomes Avenue/SR 99 SB Ramps	B	C	C
Woollomes Avenue/SR 99 NB On-Ramp	A	A	A
Woollomes Avenue/SR 99 NB Off-Ramp (High Street)	B	D	C
Woollomes Avenue/Lexington St.	A	A	A
Pond Road/SR 99 NB Ramps	A	B	-
Pond Road/SR 99 SB Ramps	A	A	-
Pond Road/Stradley Avenue	B	B	-
Pond Road/Garzoli Avenue	B	B	-
Schuster Road/Stradley Avenue	A	A	-
Schuster Road/Garzoli Avenue	A	A	-

Source: Peters Engineering Group 2007

Notes: NB = Northbound SB = Southbound

The Woollomes Avenue/SR 99 NB Off-Ramp (High Street) intersection would operate at an unacceptable LOS D during the PM peak hour under the "Existing Plus Opening Year Approved Projects (2007)" conditions. According to Peters Engineering, traffic signal warrants suggest that the intersection may satisfy peak-hour traffic signal warrants for one lane on each approach under this condition.

Roadway Segment Level of Service

The results of the roadway segment LOS calculations for "Existing Plus Opening Year (2007) Approved Projects" conditions are shown below in **Table 3.12-8, Roadway Segment Level of Service Under Existing Plus Opening Year (2007) Approved Projects Conditions.** All 24 existing roadway segments would operate at acceptable levels of service better than or equal to the allowable LOS "C" standard under "Existing Plus Opening Year (2007) Approved Projects Conditions."

TABLE 3.12-8
ROAD SEGMENT LEVEL OF SERVICE UNDER
EXISTING PLUS OPENING YEAR (2007) APPROVED PROJECTS CONDITIONS

Road Segment and Direction		Lanes & Median	AM		PM		Weekend	
			Vol	LOS	Vol	LOS	Vol	LOS
WOOLLOMES AVENUE BETWEEN:								
Albany Street and Dover Parkway	EB	1U	146	C	127	C	104	C
	WE	1U	135	C	145	C	112	C
Dover Parkway and Site Access	EB	1U	179	C	180	C	168	C
	WE	1U	151	C	176	C	135	C
Site Access and Garzoli Avenue	EB	1U	190	C	266	C	264	C
	WE	1U	182	C	239	C	244	C
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	231	C	381	C	311	C
	WB	1U	250	C	331	C	274	C
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	177	C	316	C	310	C
	WB	1U	310	C	459	C	392	C
NB SR 99 Ramps and Lexington Street	EB	1U	242	C	323	C	243	C
	WB	1U	180	C	267	C	187	C
ALBANY STREET/STRADLEY AVENUE BETWEEN:								
Schuster Road and Woollomes Avenue	NB	1U	60	C	79	C	99	C
	SB	1U	61	C	56	C	96	C
Woollomes Avenue and 1st Street	NB	1U	106	C	149	C	138	C
	SB	1U	106	C	99	C	129	C
GARZOLI AVENUE BETWEEN:								
Pond Road and Schuster Road	NB	1U	72	C	83	C	-	-
	SB	1U	44	C	88	C	-	-
Schuster Road and Woollomes Avenue	NB	1U	118	C	156	C	107	C
	SB	1U	100	C	133	C	105	C
POND ROAD BETWEEN:								
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	86	C	116	C	-	-
	WB	1U	97	C	99	C	-	-
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	83	C	64	C	-	-
	WB	1U	83	C	105	C	-	-

Source: Peters Engineering Group 2006

Notes: Vol. – Volume; U – Undivided road; EB – Eastbound;WB – Westbound;NB – Northbound;SB – Southbound.

Existing Plus Near-Term (2010) Approved Projects Condition

Intersection Level of Service

The results of the intersection LOS calculations for "Existing Plus Near-Term (2010) Approved Projects" conditions are shown below in **Table 3.12-9, Intersection Level of Service Under Existing Plus Near-Term (2010) Approved Projects Conditions.** Two of the

14 intersections would operate at an unacceptable level of service under "Existing Plus Near-Term (2010) Approved Projects Conditions."

TABLE 3.12-9
INTERSECTION LEVEL OF SERVICE UNDER
EXISTING PLUS NEAR-TERM (2010) APPROVED PROJECTS CONDITIONS

Intersections	Level of Service		
	AM	PM	Weekend
Woollomes Avenue/Albany Street	A	B	B
Woollomes Avenue/Dover Parkway	B	B	B
Woollomes Avenue/Site Access	B	B	B
Woollomes Avenue/Garzoli Avenue	B	C	B
Woollomes Avenue/SR 99 SB Ramps	B	D	D
Woollomes Avenue/SR 99 NB On-Ramp	A	A	A
Woollomes Avenue/SR 99 NB Off-Ramp (High Street)	B	F	D
Woollomes Avenue/Lexington Street	A	B	A
Pond Road/SR 99 NB Ramps	B	B	-
Pond Road/SR 99 SB Ramps	B	A	-
Pond Road/Stradley Avenue	B	B	-
Pond Road/Garzoli Avenue	B	B	-
Schuster Road/Stradley Avenue	A	A	-
Schuster Road/Garzoli Avenue	A	A	-

Source: Peters Engineering Group 2007

Notes: NB = Northbound SB = Southbound

The Woollomes Avenue/SR 99 SB Ramps intersection would operate at an unacceptable LOS D during the PM and Weekend peak hours. The Woollomes Avenue/SR 99 NB Ramps–High Street intersection would operate at an unacceptable LOS F during the PM peak hour and LOS D during the Weekend peak hours.

Roadway Segment Level of Service

The results of the roadway segment LOS calculations for "Existing Plus Near-Term (2010) Approved Projects" conditions are shown below in **Table 3.12-10, Roadway Segment Level of Service Under Existing Plus Near-Term (2010) Approved Projects Conditions.** All of the study roadway segments would operate at acceptable levels of service better than or equal to the allowable LOS "C" standard under the "Existing Plus Near-Term (2010) Approved Project Conditions."

TABLE 3.12-10
ROAD SEGMENT LEVEL OF SERVICE UNDER
EXISTING PLUS NEAR-TERM (2010) APPROVED PROJECT CONDITIONS

Road Segment and Direction	Lanes & Median		AM		PM		Weekend	
			Vol	LOS	Vol	LOS	Vol	LOS
WOOLLOMES AVENUE BETWEEN:								
Albany Street and Dover Parkway	EB	1U	181	C	143	C	128	C
	WE	1U	158	C	165	C	128	C
Dover Parkway and Site Access	EB	1U	221	C	195	C	201	C
	WE	1U	177	C	201	C	154	C
Site Access and Garzoli Avenue	EB	1U	212	C	281	C	311	C
	WE	1U	209	C	269	C	274	C
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	277	C	424	C	362	C
	WB	1U	352	C	434	C	306	C
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	286	C	333	C	356	C
	WB	1U	363	C	490	C	445	C
NB SR 99 Ramps and Lexington Street	EB	1U	280	C	332	C	279	C
	WB	1U	205	C	258	C	211	C
ALBANY STREET/STRADLEY AVENUE BETWEEN:								
Schuster Road and Woollomes Avenue	NB	1U	70	C	84	C	100	C
	SB	1U	74	C	59	C	101	C
Woollomes Avenue and 1st Street	NB	1U	127	C	174	C	146	C
	SB	1U	138	C	113	C	153	C
GARZOLI AVENUE BETWEEN:								
Pond Road and Schuster Road	NB	1U	83	C	87	C	-	-
	SB	1U	53	C	104	C	-	-
Schuster Road and Woollomes Avenue	NB	1U	133	C	190	C	119	C
	SB	1U	113	C	144	C	118	C
POND ROAD BETWEEN:								
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	99	C	124	C	-	-
	WB	1U	112	C	100	C	-	-
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	95	C	66	C	-	-
	WB	1U	95	C	106	C	-	-

Source: Peters Engineering Group 2007

Notes: Vol. – Volume; U – Undivided road; EB – Eastbound;WB – Westbound; NB – Northbound; SB – Southbound.

3.12.2 REGULATORY SETTING

REGIONAL TRANSPORTATION PLANNING

Kern Council of Governments

The Kern Council of Governments (Kern COG) is an association of city and county governments created to address regional transportation issues. Its Member Agencies include the County of Kern and the eleven incorporated cities within Kern County. As the federally designated Metropolitan Planning Organization and the state-designated Regional Transportation Planning Agency for Kern County, Kern COG is responsible for developing and updating a variety of transportation plans and for allocating the federal and state funds to implement them. Pursuant to state law, Kern COG has been designated the Regional Transportation Planning Agency (RTPA) for the Kern region. Acting in this capacity, Kern COG is responsible for developing and adopting several transportation planning documents and studies, including the Regional Transportation Plan (RTP). The RTP is a long-term (20-year) general plan for the region's transportation network, and encompasses projects for all types of travel, including aviation and freight movement. The plan assesses environmental impacts of proposed projects and establishes air quality conformity as required by federal regulations. The document also discusses inter-modal and multi-modal transportation activities.

CITY OF DELANO GENERAL PLAN

The following goals and policies from the Circulation Element of the *City of Delano General Plan* (2005) are relevant to the proposed project regarding transportation and circulation impacts:

Establish a Safe and Efficient Transportation System that Provides Adequate Access Throughout the City

Objective Achieve and maintain Level of Service "C" at all intersections throughout the City, with the exception of freeway interchanges and high volume intersections where the City's objective is to achieve and maintain Level of Service "D".

Roadway Classification, Standards

Objective Develop a circulation network of local roads, collectors, arterials and major arterials that will meet projected traffic needs.

Policy 1 All street and roadway improvements shall be consistent with the Circulation Element of the General Plan.

Policy 7 Actual design and improvement to ultimate standards shall be achieved through inclusion of facilities as part of the City-wide Capital Improvements Program, or by new developers as areas adjoining the designated circulation system are developed, with allowance for bicycle lanes, in locations adopted by the City Council.

Policy 11 New arterial and collector streets shall be designed to operate at Level of Service "C" or better for a period of at least 20 years following their construction, wherever feasible. Freeway interchanges and high volume intersections where it is not feasible to achieve and maintain LOS "C" shall be designed to achieve and maintain LOS "D" for a period of at least 20 years following their construction.

Policy 16 All land development proposals shall be reviewed to assure consistency with this Circulation Element.

Policy 30 Driveway access to major activity centers should be provided with adequate separation from the adjacent intersection of a collector or arterial street, measured from the curb return to the nearest edge of the driveway. If driveways must be provided near intersections for facilities (such as service stations) these driveways shall not be serviced by median breaks.

Policy 31 Adequate separation shall be maintained between driveways along commercially developed arterials. Where minimum spacing pursuant to City standards is not practical, the development shall provide acceptable traffic mitigation measures in addition to those already required.

Policy 33 Driveway consolidation shall be encouraged through joint access agreements along arterials.

Goods Movement

Objective Provide for the safe transport and delivery of goods in and out of the City.

Policy 3 Provide adequate access to busy destination points such as shopping centers, recreational sites, and employment centers.

Safety Standards

Objective Promote traffic safety throughout the City by enforcement of speed limits, installation of appropriate traffic control devices, and construction of pedestrian facilities.

Policy 5 Carefully design ingress and egress to shopping centers and employment centers to minimize traffic hazards.

Policy 6 In order to promote safe and efficient traffic flow throughout the City, traffic signals shall be spaced no closer than ¼-mile on arterials except in unusual circumstances. The intersections of arterial and collector streets and the access driveways to major traffic generators shall be located so as to maintain this minimum spacing.

Objective Maximize the use of site planning techniques to improve traffic safety.

Policy 2 Left hand-turn lanes shall be provided where necessary for access from arterials into high traffic commercial or multi-family developments.

Policy 6 Promote design standards that allow for safe and efficient transport, delivery, loading and unloading of goods from service vehicles within commercial and industrial areas.

Policy 7 Where major new activity centers are proposed along arterial streets, designs shall be encouraged which minimize construction along the property line or along the adopted set-back line, whichever is appropriate.

Policy 8 Developers shall mitigate traffic impacts associated with their projects.

Policy 11 Due to the traffic congestion which results from numerous points of ingress and egress along commercial streets, future commercial developments or modifications to existing developments shall be master planned with limited points of ingress and egress onto a major street. Ingress and egress to shopping centers should be carefully designed in order to promote traffic safety. Left-hand movements into and out of commercial areas should be minimized and existing points of ingress and egress shall be consolidated whenever possible.

Transportation Systems and Congestion Management

Objective Maximize the efficiency of the existing street system.

Policy 3 Promote the long term shifting of peak hour commute trips from the single occupant automobile to ridesharing, buses, pedestrian, and bicycles.

Policy 4 Large development shall be encouraged to incorporate transit passenger facilities, bicycle racks or lockers, shower facilities, as well as on-site services (eating, mail, banking, etc.) as ways to encourage alternative modes for commute trips.

Policy 7 Needed improvements to the Pond Road and Woollomes Avenue ramps shall be timed to occur in conjunction with the commercial development projects planned for those areas.

Parking

Objective Promote a parking program that meets the needs of each land use type.

Policy 1 Adequate off-street parking shall be required of all commercial and industrial land uses to accommodate parking demand.

Bicycle Facilities

Objective Provide various types of transportation modes throughout the City.

Policy 1 Maintain and encourage safe and interesting pedestrian and bicycle circulation routes throughout the City.

Policy 3a. Bike lanes are an on-street bikeway in which separate automobile and bicycle travel lanes are designed visually by signs and street markings. Bike lanes shall be implemented on new improved streets or segments.

Policy 5 Secure bicycle parking facilities shall be required as conditions of approval for all new major activity centers, public and private places of assembly, and commercial or industrial developments.

Policy 6 Sidewalks, paths, and appropriate crosswalks should be located to facilitate access to all schools and other areas with significant pedestrian traffic. Whenever feasible, pedestrian paths should be developed to allow for unobstructed pedestrian flow from within a neighborhood.

Policy 7 The City shall require curb, gutter, and sidewalks in all areas of the community to accommodate pedestrian traffic, especially along routes

with high pedestrian traffic such as schools, parks, and the Downtown area. Installation of these improvements shall be encouraged to the extent feasible in existing neighborhoods where they do not currently exist.

Policy 8 The City shall promote safe, convenient, and accessible pedestrian ways within the community.

Policy 10 Require street lighting within the rights-of-way of all public streets.

Policy 11 Include pedestrian signal indications as an integral part of the installation of traffic signals.

The following policies from the Community Design Element of the *Delano General Plan* are relevant to the proposed project regarding transportation and circulation impacts:

Policy 21 Site planning should emphasize a strong relationship to the adjoining street(s) and encourage pedestrian circulation and access. Pedestrian access shall be separate from vehicular access, where feasible.

Policy 22 Site plans shall provide safe and well-defined pedestrian connections from buildings to parking areas, from buildings to the adjoining street(s), and among buildings on the same site. Pedestrian connections between commercial development and surrounding residential neighborhoods should also be provided.

Policy 23 Buildings, sidewalks, and parking lots should be located to minimize conflicts between pedestrian and vehicular circulation on a site.

City of Delano Traffic Impact Mitigation Fee Program

The City of Delano currently maintains a traffic mitigation fee program and collects fees from development projects in order to guarantee implementation of traffic control measures and road maintenance objectives throughout the City. These objectives are outlined in the *City of Delano General Plan* and in the *City of Delano Public Works Standards Manual*.

The City is currently in the process of revising the existing traffic mitigation fee program. The proposed update consists of raising the base circulation impact fee from approximately $120 to $237 per vehicle trip, or $1,200 to $2,374 for a new single family home. Fees for other uses would be raises proportionally. The primary reason for updating the traffic impact fee mitigation program is to provide for funding for future interchange

improvements at State Route 99/Woollomes Avenue and proposed modification of other components, including the pass-by factors for non-residential use.

The City of Delano is currently preparing a Project Study Report and Project Report (PSR/PR) for interim improvements to the State Route 99/Woollomes Avenue interchange required by the proposed Delano Marketplace project. The estimated cost of improvements for the interim improvements is approximately $5.0 million including design, right-of-way construction, and related costs. An additional $3.0 million is budgeted for additional right-of-way, studies, and preliminary costs for the ultimate configuration of the interchange. The cost for design and construction of the ultimate configuration is estimated at $60 million. The City anticipates receiving some State and Federal funding for the interchange improvements with future development impact fees providing approximately 55 percent of the design and construction costs for approximately $33 million. The incremental cost for the ultimate configuration of the Woolllomes Avenue/State Route 99 interchange project will be approximately $66.93 per trip, which will be added to the City's traffic impact fee program.

3.12.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on CEQA Guidelines and other performance standards recognized by the City of Delano. The Circulation Element in the *City of Delano General Plan* (City of Delano 2005) indicates a level of service (LOS) C or better is desirable within the City for both road segments and intersections. However, Roadway Classification Standards Policy 11 in the *City of Delano General Plan* states that Freeway interchanges and high volume intersections, where it is not feasible to achieve and maintain LOS C shall be designed to achieve and maintain LOS D for a period of at least 20 years following their construction. For the purposes of this EIR, impacts are considered significant if the following would result from implementation of the proposed project:

1) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system and degrades the level of service of roadways or intersections below LOS C, or below LOS D for interchanges and high volume intersections, where LOS C is infeasible;

2) Exacerbate existing traffic conditions that are currently experiencing an unacceptable LOS;

3) Result in insufficient parking capacity on-site or off-site as calculated by City standards;

4) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections or incompatible uses);

5) Result in inadequate emergency access;

6) Conflict with adopted policies, plans, or programs supporting alternative transportation; and/or

7) Contribute significantly to any cumulative traffic or circulation impact.

METHODOLOGY

The impact evaluation is based primarily on a revised traffic impact study prepared in April 2007 by Peters Engineering Group, as well as an addendum to the traffic impact study that provides additional analysis regarding the characteristics of five study intersections (Woollomes Avenue/Garzoli Avenue; Woollomes Avenue/State Route 99 Southbound On-Ramp; Woollomes Avenue/State Route 99 Northbound On-Ramp; Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street); and Woollomes Avenue/Lexington Street) during a railroad pre-emption event. The traffic impact study and the addendum are included as Appendix J of this RDEIR. The methods used in various aspects of the technical analysis are fully explained in the traffic impact study and addendum and are summarized as appropriate in the following discussion of impacts associated with the proposed project. Due to the timing of approved and cumulative projects in the vicinity of the project site, Peters Engineering Group prepared an analysis of the proposed project under the following conditions: "Opening Year (2007) Project" conditions, "Near-Term (2010) Project" conditions, and "Cumulative (2030) Project" conditions in consultation with the City of Delano. The addendum to the traffic impact study evaluates a conservative scenario assuming that a train, one and one-half mile in length, traveling at ten miles per hour, arriving at the Woollomes Avenue railroad crossing during the AM, PM, and Weekend peak hours.

PROJECT IMPACTS AND MITIGATION MEASURES

Level of Service Impacts Under Opening Year (2007) Project Conditions

Impact 3.12-1 Implementation of the proposed project would result in the generation of approximately 22,294 net weekday trips. These trips in addition to approximately 7,234 trips generated by approved projects anticipated to be completed by December 2007 (anticipated opening of the proposed project) would result in unacceptable levels of service during the AM, PM and/or Weekend peak hours at five intersections and five roadway segments. This is considered a **potentially significant impact.**

Trip Generation

Peters Engineering Group used data provided in the Institute of Transportation Engineers (ITE) *Trip Generation, 7th Edition (2004)* to estimate the number of trips generated by the proposed project, as presented in **Table 3.12-11, Project Trip Generation**. The amount of traffic generated by the proposed project is estimated by applying the appropriate trip generation rates corresponding to the land use type in the proposed development. The ITE trip generation rate for the "Discount Superstore" incorporates uses to be included in the proposed Wal-Mart Supercenter, such as grocery and garden center uses. Internal captured trip reductions were applied to the proposed project, as determined by ITE, and were subtracted from gross project trips to determine the net project trips. Internal captured trips are those trips that do not enter or leave the driveway of a commercial development (e.g., those trips that go to the Wal-Mart Supercenter and the home improvement store). Internal captured trip reductions were calculated in accordance with the procedures presented in the ITE *Trip Generation Handbook* (2004). Based on data presented by ITE, an internal capture rate of no more than five percent was assumed between the proposed discount superstore, the home improvement store, both the proposed retail stores, and the Wal-Mart Supercenter. The traffic impact analysis did not account for any diverted link trips off State Route 99 or any pass-by trip reductions due to the low existing traffic volumes on Woollomes Avenue west of the project site.

TABLE 3.12-11
PROJECT TRIP GENERATION

Land Use	ITE Code	Area (square feet)	Weekday Total	Peak Hour Traffic Volumes					
				AM		PM		Weekend	
				Enter	Exit	Enter	Exit	Enter	Exit
Free-Standing Discount Superstore	813	228,751	11,257	215	207	434	452	585	562
Home Improvement Superstore	862	172,463	5,140	112	96	199	224	494	438
Shopping Center	820	35,944	1,544	23	15	65	71	93	86
Fast Food with Drive Through	934	8,100	4,019	220	211	146	135	245	235
Gasoline/Service Station	944	14 fueling positions	2,360	85	85	98	98	98*	98*
Gross Project Trips			24,320	655	614	942	980	1,515	1,419
Internal Captured-Trip Reductions[1]			-2,026	-67	-67	-79	-79	-124	-124
Net Project Trips			22,294	588	547	863	901	1,391	1,295

Source: Peters Engineering Group 2006

Notes: 1. Captured trips are those trips that do not enter or leave the driveway of a commercial development (e.g., those trips that are attributed to the Wal-Mart Supercenter and the home improvement store).

2. Although project trip generation for Pad #4 (Conditional Use Permit was approved by the City of Delano on February 21, 2006) is not incorporated into this table, these trips are reflected in Table 3.12-6 and have been included in the analysis under both Opening Year (2007) Scenarios.

The distribution of project traffic to the adjacent road network was performed by manual methods based on a review of the traffic volumes projected using the Kern County travel model.

Level of Service Under Opening Year (2007) Project Conditions

The "Existing Plus Opening Year (2007) Approved Projects Plus Project" conditions is defined as existing traffic conditions with approved projects anticipated to be completed prior to December 2007 (the anticipated opening of the proposed project) plus traffic generated by the proposed project. The resulting traffic scenario is herein referred to as "Opening Year (2007) Project" conditions. This scenario includes anticipated traffic that would be generated by Pad #4 of the Delano Marketplace project, which was approved this year by the City of Delano in February 2006.

As noted in **Table 3.12-6, Approved Projects**, approximately 7,234 weekday trips would be associated with these projects would be on the roadway network by opening year in 2007. These trips combined with the proposed project generated trips, as shown in **Table 3.12-11, Intersection Level of service Under Opening Year (2007) Project Conditions,** would result in increased volumes of traffic at the study intersections and roadway segments. Analysis of the intersection and roadway segment impacts under "Opening Year (2007) Project" conditions is provided below.

Intersection Level of Service

The results of the intersection LOS calculations for "Opening Year (2007) Project" conditions are shown below in **Table 3.12-12, Intersection Level of Service Under Opening Year (2007) Project Conditions.**

TABLE 3.12-12
INTERSECTION LEVEL OF SERVICE UNDER
OPENING YEAR (2007) PROJECT CONDITIONS

Intersection	Level of Service		
	AM	PM	Weekend
Woollomes Avenue/Albany Street	B	B	C
Woollomes Avenue/Dover Parkway	C (B)	F (C)	F (C)
Woollomes Avenue/Site Access	F (C)	F (C)	F (C)
Woollomes Avenue/Garzoli Avenue	C (A)	F (B)	F (B)
Woollomes Avenue/SR 99 SB Ramps	C (A)	F (B)	F (B)
Woollomes Avenue/SR 99 NB On-Ramp	A (B)	A (C)	B (C)
Woollomes Avenue/SR 99 NB Off-Ramp (High Street)	F (B)	F (C)	F (C)
Woollomes Avenue/Lexington Street	B (A)	C (B)	C (B)
Pond Road/SR 99 NB Ramps	B	B	-
Pond Road/SR 99 SB Ramps	B	A	-
Pond Road/Stradley Avenue	B	B	-
Pond Road/Garzoli Avenue	B	B	-
Schuster Road/Stradley Avenue	A	B	-
Schuster Road/Garzoli Avenue	B	B	-

Source: Peters Engineering Group 2006

Notes: NB = Northbound; SB = Southbound. Mitigated LOS shown in parentheses. See mitigation measures incorporated herein.

Five of the 14 study intersections would operate at an unacceptable level of service of LOS D or worse, during the AM, PM, and/or Weekend peak hours, under Opening Year (2007) Project conditions, as discussed below.

Woollomes Avenue/Dover Parkway Intersection. The Woollomes Avenue/Dover Parkway intersection would operate at an unacceptable LOS F during the PM and Weekend peak hours. This would be considered a **potentially significant impact**. The following mitigation measure would improve operations at this intersection to an acceptable level, which would improve the level of service to acceptable levels.

Mitigation Measure

MM 3.12-1a Prior to occupancy of the proposed project, the project applicant shall construct the following improvements to the Woollomes Avenue and Dover Parkway intersection, subject to review and approval by the City of Delano: signalize and stripe the intersection to provide one dedicated left-turn lane with protected left-turn phasing, one dedicated right-turn lane, and one through lane on all four approaches. The intersection shall be designed and constructed wide enough to ultimately accommodate "Cumulative (2030) Project" conditions, which would includes: two left-turn lanes with protected left-turn phasing; and three through lanes.

Implementation of mitigation measure **MM 3.12-1a** would improve operations at the Woollomes Avenue/Dover Parkway intersection to an acceptable level of service of LOS B during the AM peak hour and LOS C during the PM and Weekend peak hours, which would reduce the impact to this intersection to a **less than significant** level.

Woollomes Avenue/Site Access Intersection. The Woollomes Avenue/Site Access intersection would operate at an unacceptable LOS F during the AM, PM, and Weekend peak hours, which would be considered a **potentially significant impact.** The following mitigation measure would reduce this impact to a **less than significant level.**

Mitigation Measure

MM 3.12-1b Prior to occupancy of the proposed project, the project applicant shall construct the following improvements to the Woollomes Avenue/Site Access intersection, subject to review and approval by the City of Delano: 1) signalize and stripe the intersection to allow left-turn phasing in eastbound and westbound directions; 2) two northbound left-turn lanes and two westbound left-turn lanes (approximately 350 feet long) in each direction on Woollomes Avenue; and 3) two through lanes in the eastbound and westbound directions.

The intersection shall be designed and constructed wide enough to ultimately accommodate "Cumulative (2030) Project" conditions, which includes: two northbound left-turn lanes, two westbound left-turn lanes, and two eastbound left-turn lanes; three through lanes; and one eastbound right-turn lane and westbound right-turn lane. The final design of these improvements shall be coordinated with the State Route 99 improvements required in mitigation measures **MM 3.12-1c** and **MM 3.12-1d** and subject to review in the Project Study Report (PSR)/Project Report (PR).

Implementation of mitigation measures **MM 3.12-1b** would improve the operations at Woollomes Avenue/Site Access intersection to acceptable levels of service LOS C during the AM, PM and Weekend peak hours under "Opening Year (2007) Project" conditions. This would reduce the impacts to a **less than significant** level.

Woollomes Avenue/Garzoli Avenue. The Woollomes Avenue/Garzoli Avenue intersection would operate at an unacceptable LOS F during the PM and Weekend peak hours under the "Opening Year (2007) Project" conditions. This would be considered a **potentially significant impact.** Signalizing and configuring this intersection to allow protected left-turn phasing; two dedicated left-turn lanes for the westbound left-turn; and one through lane in each direction would improve operations at the Woollomes Avenue/Garzoli Avenue intersection to an acceptable level of service of LOS B during the PM and Weekend peak hours, which would reduce this impact to a **less than significant level**. However, due to the proximity of the intersections this improvement may not be feasible in conjunction with the associated improvements at the Woollomes Avenue/State Route 99 interchange. Therefore, the Woollomes Avenue/Garzoli Avenue intersection improvements shall be included in the Opening Year (2007) interim interchange improvement in the PSR/PR required in mitigation measure **MM 3.12-1c**, which will improve operations at this intersection to LOS B or better.

Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street). The Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street) intersection would operate at an unacceptable LOS F during the AM, PM, and Weekend peak hours. This would be considered a **potentially significant impact**. Signalizing and configuring the intersection to allow left-turn phasing; a dedicated left-turn lane for the eastbound left-turn; and a dedicated through lane would improve the operations at the Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street) intersection to an acceptable level of service of LOS B during the AM and LOS C during the PM and Weekend peak hours, which would reduce this impact to a **less than significant level**. However, due to the proximity of the intersections this improvement may not be feasible in conjunction with the associated improvements at the Woollomes Avenue/State Route 99 interchange. Therefore, the Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street) intersection improvements shall be included in the Opening Year (2007) interim interchange improvement in the PSR/PR required in mitigation measure **MM 3.12-1c**, which will improve operations at this intersection to LOS C or better.

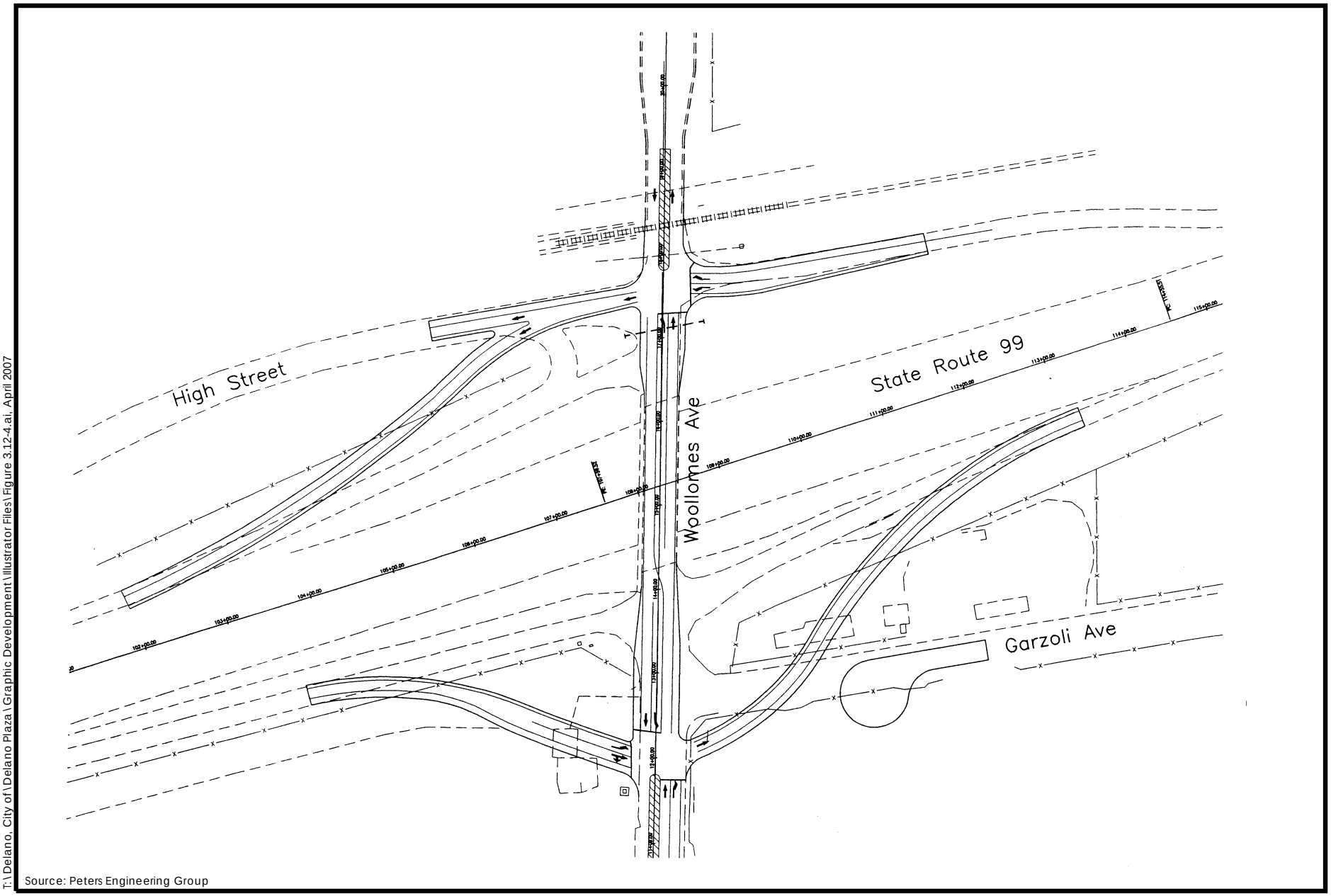
Woollomes Avenue/State Route 99 Southbound Ramps. The Woollomes Avenue/State Route 99 southbound ramp intersection would operate at an unacceptable LOS F during the PM and Weekend peak hours. This is considered a **potentially significant impact**. Signalizing and configuring this intersection to allow protected left-turn phasing; a dedicated left-turn lanes for the westbound left-turn; and one through lane in each direction would improve operations at the Woollomes Avenue/State Route 99 Southbound

Ramps intersection to an acceptable level of service of LOS B during the PM and Weekend peak hours, which reduces this impact to a less than significant level. However, due to the proximity of the intersections this improvement may not be feasible in conjunction with the associated improvements at the Woollomes Avenue/State Route 99 interchange. Therefore, the Woollomes Avenue/State Route 99 Southbound Ramp intersection improvements shall be included in the Opening Year (2007) interim interchange improvement in the PSR/PR required in mitigation measure. The operation of the High Street and Garzoli Avenue connections to Woollomes Avenue are closely related to the operation of the interchange. The following mitigation measures would improve the level of service, as well as improve the operations at the Woollomes Avenue intersections at the Site Access, Garzoli Avenue, Lexington Street, and the State Route 99 northbound and southbound ramps.

Mitigation Measure

MM 3.12-1c Prior to occupancy of the proposed project, the project applicant shall prepare a Project Study Report (PSR)/Project Report (PR), in accordance with Caltrans requirements for the Woollomes Avenue/State Route 99 interchange. The PSR/PR will evaluate interchange options under Opening Year (2007) Project conditions and Cumulative (2030) Project conditions. The PSR/PR shall include a conceptual configuration that has been accepted by Caltrans and shall identify a recommended alternative for reconstruction of the interchange in order to improve operations to an acceptable level of service. A conceptual Opening Year (2007) interim interchange configuration to mitigate opening year project impacts is illustrated in **Figure 3.12-4, Conceptual Interchange Improvements at Woollomes Avenue/State Route 99**. The PSR/PR shall include an analysis of the treatment of intersections along Woollomes Avenue at the Site Access, Garzoli Avenue, High Street, Lexington Street, and State Route 99 Southbound and Northbound ramps in order to improve operations to acceptable levels of service. The PSR/PR shall also address the adjacent railroad. The Opening Year (2007) interim interchange configuration analysis in the PSR shall include final design recommendations for the following conceptual design.

- **Woollomes Avenue/State Route 99 Ramps Intersections** - Relocate State Route 99 northbound on-ramp to the east, connecting from High Street; and State Route 99 southbound ramps to the west. Convert northbound High Street to a one-way roadway for northbound traffic only with southbound traffic on High Street redistributed to Lexington Street.
- **Garzoli Avenue/Woollomes Avenue Intersection** - Garzoli Avenue would be disconnected from Woollomes Avenue and the southbound on-



Source: Peters Engineering Group

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FIGURE 3.12-4

CONCEPTUAL INTERCHANGE IMPROVEMENTS AT WOOLLOMES AVENUE/STATE ROUTE 99

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ramp. Construct a street connecting Garzoli Avenue to Dover Parkway south of the project site to allow northbound traffic on Garzoli Avenue to access Woollomes Avenue via Dover Parkway.

In addition, Woollomes Avenue/Site Access intersection improvements included in mitigation measure **MM 3.12-1b** and Woollomes Avenue/Lexington Street intersection improvements included in mitigation measure **MM 3.12-1f** shall be included in the PSR/PR. The PSR/PR will be subject to the review and approval of Caltrans, the City of Delano, and the State of California Public Utilities Commission (PUC).

MM 3.12-1d Prior to occupancy of the proposed project, the project applicant shall construct the recommended improvements identified in the PSR/PR for the Woollomes Avenue intersections at Site Access, Garzoli Avenue, Lexington Street, and the State Route 99 northbound (including High Street) and southbound ramps subject to review and approval by Caltrans, the City of Delano, and the State of California Public Utilities Commission (PUC). Construction of the improvements shall be subject to a Caltrans encroachment permit and any permits required by the PUC or owner of the railroad right of way. Construction of the required improvements must be completed prior to operation of the proposed project.

Implementation of mitigation measures **MM 3.12-1c** and **MM 3.12-1d** would improve the operations at all of the intersections along Woollomes Avenue to acceptable levels of service under "Opening Year (2007) Project" conditions, which would reduce the impacts to a **less than significant level.**

Roadway Segment Level of Service

The results of the roadway segment LOS calculations for the "Opening Year (2007) Plus Project" conditions are shown below in **Table 3.12-13, Roadway Segment Level of Service Under Opening Year (2007) Project Conditions.**

Table 3.12-13
ROAD SEGMENT LEVEL OF SERVICE UNDER OPENING YEAR (2007) PROJECT CONDITIONS

Road Segment and Direction	Lanes & Median		AM		PM		Weekend	
			Vol	LOS	Vol	LOS	Vol	LOS
WOOLLOMES AVENUE BETWEEN:								
Albany Street and	EB	1U	250	C	279	C	358	C
Dover Parkway	WE	1U	240	C	311	C	368	C
Dover Parkway and	EB	1U	297	C	374	C	471	C

Road Segment and Direction	Lanes & Median		AM		PM		Weekend	
			Vol	LOS	Vol	LOS	Vol	LOS
Site Access	WE	1U	372	C	515	D (C)	670	D (C)
Site Access and Garzoli Avenue	EB	1U	446	C	703	D (C)	920	F (C)
	WE	1U	487	D (C)	679	D (C)	978	F (C)
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	538	D (C)	878	F (C)	1059	F (C)
	WB	1U	573	D (C)	809	E (C)	1070	F (C)
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	402	C	681	D (C)	859	F (C)
	WB	1U	556	D (C)	817	F (C)	992	F (C)
NB SR 99 Ramps and Lexington Street	EB	1U	346	C	492	D (C)	497	D (C)
	WB	1U	291	C	429	C	458	C
ALBANY STREET/STRADLEY AVENUE BETWEEN:								
Schuster Road and Woollomes Avenue	NB	1U	76	C	102	C	139	C
	SB	1U	76	C	80	C	132	C
Woollomes Avenue and 1st Street	NB	1U	188	C	282	C	338	C
	SB	1U	194	C	227	C	343	C
GARZOLI AVENUE BETWEEN:								
Pond Road and Schuster Road	NB	1U	125	C	160	C	-	-
	SB	1U	94	C	171	C	-	-
Schuster Road and Woollomes Avenue	NB	1U	162	C	243	C	244	C
	SB	1U	128	C	198	C	211	C
POND ROAD BETWEEN:								
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	113	C	161	C	-	-
	WB	1U	126	C	141	C	-	-
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	93	C	82	C	-	-
	WB	1U	112	C	147	C	-	-

Source: Peters Engineering Group 2006

Notes: Vol. – Volume; U – Undivided road; EB – Eastbound; WB – Westbound; NB – Northbound; SB – Southbound.

Five of the 24 study roadway segments would operate at unacceptable levels of service of LOS D or worse, during the AM, PM and/or Weekend peak hours, under "Opening Year (2007) Project" conditions. The roadway segment deficiencies under "Opening Year (2007) Project" conditions are discussed below.

Woollomes Avenue between Dover Parkway and Site Access. Westbound Woollomes Avenue between Dover Parkway and the project site access would operate at an unacceptable LOS D during the PM and Weekend peak hours.

Woollomes Avenue between Site Access and Garzoli Avenue. Eastbound Woollomes Avenue between Site Access and Garzoli Avenue would operate at an unacceptable LOS D

during the PM peak hour and LOS F during the Weekend peak hours. Westbound Woollomes Avenue between Site Access and Garzoli Avenue would operate at an unacceptable LOS D during the AM and PM peak hours.

Woollomes Avenue between Garzoli Avenue and Southbound State Route 99 Ramps. Eastbound Woollomes Avenue between Garzoli Avenue and Southbound State Route 99 Ramps would operate at an unacceptable LOS D during the AM peak hour and LOS F during the PM and Weekend peak hours. Westbound Woollomes Avenue between Garzoli Avenue and Southbound State Route 99 Ramps would operate at an unacceptable LOS D during the AM peak hour, LOS E during the PM peak hour, and LOS F during the Weekend peak hours.

Woollomes Avenue between Southbound State Route 99 Ramps and Northbound State Route 99 Ramps. Eastbound Woollomes Avenue between Southbound State Route 99 Ramps and Northbound State Route 99 Ramps would operate at an unacceptable LOS D during the PM and LOS F during the Weekend peak hours. Westbound Woollomes Avenue between Southbound State Route 99 Ramps and Northbound State Route 99 Ramps would operate at an unacceptable LOS D during the AM peak hour, LOS F during the PM peak hour, and Weekend peak hours.

With implementation of the proposed project, five of the roadway segments would operate at unacceptable levels of service under "Opening Year (2007) Project" conditions, which is considered to be a **potentially significant impact.** Implementation of the following mitigation measure would improve the level of service at these roadway segments to an acceptable level of service.

Mitigation Measure

MM 3.12-1e Prior to occupancy of the proposed project, the project applicant shall design and construct Woollomes Avenue to provide two through travel lanes in each direction and a median between Dover Parkway and the State Route 99 southbound ramps subject to review and approval by the city of Delano. The roadway segment along the frontage of the project site shall be designed and constructed wide enough to accommodate the ultimate "Cumulative (2030) Project" conditions, which would includes: three through lanes in each direction and a median. All traffic signals on Woollomes Avenue shall be coordinated. Communication conduit and cable or equivalent shall be installed to allow coordination of traffic signals.

According to the traffic impact analysis prepared by Peters Engineering Group, traffic operations in urban areas with closely spaced intersections are governed by the operations at the intersections rather than the operations along the roadway segments. Implementation of mitigation measures **MM 3.12-1a** through **MM 3.12-1d** would improve operations at all

of the study intersections, which would improve the operations of the roadway segments along the Woollomes Avenue corridor to acceptable levels of service, under "Opening Year (2007) Project" conditions. In addition, mitigation measure **MM 3.12-1e** would coordinate traffic signals, which would further improve operations along the Woollomes Avenue corridor to acceptable levels, which would reduce this impact to a **less than significant** level.

Woollomes Avenue between Northbound State Route 99 Ramps and Lexington Street . Eastbound Woollomes Avenue between Northbound State Route 99 Ramps and Lexington Street would operate at an unacceptable LOS D during the PM, and Weekend peak hours. Implementation of mitigation measures **MM 3.12-1c** and **MM 3.12-1d** would redistribute traffic in the area. The redistribution of traffic would result in a secondary impact and an unacceptable level of service at this roadway segment, which would be considered a **potentially significant impact.** The following mitigation measure would improve the operations at the Woollomes Avenue/Lexington Street intersection, which would improve the operations along Woollomes Avenue between Northbound State Route 99 Ramps and Lexington Street and reduce the impact to a **less than significant level**.

Mitigation Measure

MM 3.12-1f Prior to occupancy of the proposed project, the project applicant shall be responsible for construction of the following improvements to the Woollomes Avenue/Lexington Street intersection, subject to review and approval by the City of Delano: signalize and construct-the intersection to provide left-turn phasing; a dedicated left-turn lane for the northbound left-turn. The intersection shall be designed and constructed wide enough to ultimately accommodate "Cumulative (2030) Project" conditions, which includes: two eastbound left-turn lanes, and one northbound left-turn lane. The final design of this improvement shall be subject to review in the PSR/PR.

Implementation of mitigation measure **MM 3.12-1f** would improve the operations along Woollomes Avenue between Northbound State Route 99 Ramps and Lexington Street to an acceptable level of service of LOS C during the PM and Weekend peak hours, under "Opening Year (2007) Project" conditions, which would reduce this impact to a less than significant level.

Level of Service Under Near-Term (2010) Project Conditions

Impact 3.12-2 Implementation of the proposed project would result in the generation of approximately 22,294 net weekday trips. These trips in addition to approximately 10,996 trips generated by approved projects anticipated to be completed in the near-term by the year 2010 would result in

unacceptable levels of service during the AM, PM and/or Weekend peak hours at five intersections and five roadway segments. This is considered a **potentially significant impact.**

The "Existing Plus Near-Term (2010) Approved Projects Plus Project" conditions is defined as existing traffic conditions plus approved projects anticipated to be completed by the year 2010 plus traffic generated by the proposed project (as presented in the traffic impact analysis prepared by Peters Engineering Group in Appendix J). The resulting traffic scenario is hereinafter referred to as "Near-Term (2010) Project" conditions.

As noted in **Table 3.12-6, Approved Projects**, approximately 10,192 weekday trips would be added to the roadway network by the year 2010. These trips combined with the trips generated by the proposed project as presented in **Table 3.12-11, Trip Generation** would result in increased volumes of traffic at study intersections and roadway segments. Analysis of the intersection and roadway segment impacts under "Near-Term (2010) Project" conditions is provided below.

Intersection Level of Service

The results of the intersection LOS calculations for opening year background traffic conditions plus project conditions are shown below in **Table 3.12-14, Intersection Level of Service Under Near-Term (2010) Year Project Conditions.**

TABLE 3.12-14
INTERSECTION LEVEL OF SERVICE UNDER NEAR-TERM (2010) PROJECT CONDITIONS

Intersection	Level of Service		
	AM	PM	Weekend
Woollomes Avenue/Albany Street	B (B)	B (B)	D (C)
Woollomes Avenue/Dover Parkway	D (B)	F (C)	F (C)
Woollomes Avenue/Site Access	F (C)	F (C)	F (C)
Woollomes Avenue/Garzoli Avenue	D (A)	F (B)	F (B)
Woollomes Avenue/SR 99 SB Ramps	D (A)	F (B)	F (B)
Woollomes Avenue/SR 99 NB On-Ramp	A (B)	A (C)	C (D*)
Woollomes Avenue/SR 99 NB Off-Ramp (High Street)	F (B)	F (C)	F (D*)
Woollomes Avenue/Lexington St.	B (A)	C (B)	D (B)
Pond Road/SR 99 NB Ramps	B	B	-
Pond Road/SR 99 SB Ramps	B	B	-
Pond Road/Stradley Avenue	B	B	-
Pond Road/Garzoli Avenue	B	C	-

Intersection	Level of Service		
	AM	PM	Weekend
Schuster Road/Stradley Avenue	A	B	-
Schuster Road/Garzoli Avenue	B	B	-

Source: Peters Engineering Group 2006

Notes: NB = Northbound; SB = Southbound. Mitigated LOS shown in parentheses. See Discussion for associated improvements.

* Roadway Classification Standards Policy 11 in the City of Delano General Plan states that Freeway interchanges and high volume intersections where it is not feasible to achieve and maintain LOS C shall be designed to achieve and maintain LOS D for a period of at least 20 years following their construction.

Five of the 14 study intersections would operate at unacceptable levels of service during the AM, PM and/or Weekend peak hours, under "Near-Term (2010) Project" conditions. The roadway segment deficiencies under "Near-Term (2010) Project" conditions are discussed in detail below.

Woollomes Avenue/Albany Street Intersection. The Woollomes Avenue/Albany Street intersection would operate at acceptable levels of service during the AM and PM peak hours and unacceptable LOS D during the Weekend peak hours under "Near-Term (2010) Project" conditions. The deficient levels of service are experienced on Saturdays when long queues occur from cars turning left onto Albany Street and prohibit right-turn movements onto Albany Street. According to Peters Engineering Group, warrants for intersection signalization are not expected to be satisfied. However, the deficient levels of service experienced on Saturday are considered a **potentially significant impact.** The following mitigation measure would improve operations at the Woollomes Avenue/Albany Street intersection to acceptable levels of service, under "Near-Term (2010) Project" conditions.

Mitigation Measure

MM 3.12-2 Prior to occupancy of the proposed project, the City of Delano shall require that the project applicant provide one westbound right-turn lane at the Woollomes Avenue/Albany Street intersection, subject to review and approval by the City of Delano.

Implementation of mitigation measure **MM 3.12-2** would improve operations at the Woollomes Avenue/Albany Avenue intersection to LOS B during the AM and PM peak hour and LOS C during the Weekend peak hour under "Near-Term (2010) Project" conditions. Therefore, this intersection would operate at acceptable levels of service in accordance with City standards which would be considered a **less than significant impact.**

Woollomes Avenue/Dover Parkway Intersection. The Woollomes Avenue/Dover Parkway intersection would operate at an unacceptable LOS D during the AM and LOS F during the PM and Weekend peak hours. This would be considered a **potentially significant impact.** Traffic signal warrant analyses at the Woollomes Avenue/Dover Parkway intersection determine that traffic signals are warranted for all intersection configurations. However, implementation of the mitigation measure **MM 3.12-1a** would require that the project applicant signalize the intersection and make the intersection configuration improvements prior to occupancy of the proposed project. These improvements would improve the Woollomes Avenue/Dover Parkway intersection level of service under "Near-Term (2010) Project" conditions to an acceptable level of service of LOS B during the AM peak hour and LOS C during the PM peak hour and Weekend peak hours. Therefore, operations at the Woollomes Avenue/Dover Parkway Intersection would operate at acceptable levels of service in accordance with City standards with implementation of **MM 3.12-1a,** which would be considered **a less than significant impact**.

Woollomes Avenue/Site Access Intersection. The Woollomes Avenue/Site Access intersection would operate at an unacceptable LOS F during the AM, PM, and Weekend peak hours. This would be considered a **potentially significant impact.** Traffic signal warrant analyses at the Woollomes Avenue/Site Access intersection determine that traffic signals are warranted for all intersection configurations. However, implementation of the mitigation measure **MM 3.12-1b** would require the project applicant to signalize the intersection and make the intersection configuration improvements prior to occupancy of the proposed project. These improvements would improve the operations at the Woollomes Avenue/Site Access intersection to an acceptable level of service of LOS C during the AM and PM peak hour and LOS C during the Weekend peak hour. Therefore, operations at the Woollomes Avenue/Site Access intersection would operate at acceptable levels of service and this impact would be considered **less than significant**.

Woollomes Avenue/Garzoli Avenue. The Woollomes Avenue/Garzoli Avenue intersection would operate at an unacceptable LOS D during the AM peak hour and LOS F during the PM and Weekend peak hours under the "Existing Plus Near-Term (2010) Approved Projects Plus Project" condition. This would be considered a **potentially significant impact**. Traffic signal warrant analyses at the Woollomes Avenue/Garzoli Avenue intersection determine that traffic signals are warranted for all intersection configurations. Signalizing and configuring this intersection to allow protected left-turn phasing; two dedicated left-turn lanes for the westbound left-turn; and one through lane in each direction would improve operations to an acceptable level of service of LOS A during the AM peak hour and LOS B during the PM and Weekend peak hours. However, due to the proximity of the intersections this improvement may not be feasible in conjunction with other improvements nearby. Therefore, the Woollomes Avenue/Garzoli Avenue intersection improvements shall be included in the Opening Year (2007) interim interchange improvement in the PSR/PR required in mitigation measure **MM 3.12-1c**. The PSR/PR shall

evaluate and recommend improvements to this intersection, which would improve the operations at the Woollomes Avenue/Garzoli Avenue intersection to acceptable levels of service of LOS B or better. Therefore, the Woollomes Avenue/Garzoli Avenue intersection level of service impact under "Near-Term (2010) Project" conditions would be reduced to a **less than significant level**.

Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street). The Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street) intersection would operate at an unacceptable LOS F during the AM, PM, and Weekend peak hours under the "Existing Plus Near-Term (2010) Approved Projects Plus Project" condition. Traffic signal warrant analyses at the Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street) intersection determine that traffic signals are warranted for all intersection configurations. This would be considered a **potentially significant impact.** Signalizing and configuring the intersection to allow left-turn phasing; a dedicated left-turn lane for the eastbound left-turn; and one through lane in each direction would improve the operations at the Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street) intersection to an acceptable level of service of LOS B during the AM peak hour and LOS C during the PM peak hour and LOS D during the Weekend peak hours, which would reduce this impact to a **less than significant level**. However, due to the proximity of the intersections this improvement may not be feasible in conjunction with other improvements nearby. Therefore, the Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street) intersection improvements shall be included in the Opening Year (2007) interim interchange improvement in the PSR required in mitigation measure **MM 3.12-1c**. The PSR/PR shall evaluate and recommend improvements to this intersection, which would improve the operations at the Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street) intersection to acceptable levels of service of LOS D or better**.** Policy 11 in the *City of Delano General Plan* states that freeway interchanges and high volume intersections, where it is not feasible to achieve and maintain LOS C, shall be designed to achieve and maintain LOS D for a period of at least 20 years following their construction. Therefore, the Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street**)** intersection level of service impact under "Near-Term (2010) Project" conditions would be reduced to a **less than significant level** with incorporation of Mitigation Measure **MM 3.12-1c**.

Woollomes Avenue/State Route 99 Southbound Ramps. The Woollomes Avenue/State Route 99 southbound ramps intersection would operate at an unacceptable LOS D during the AM peak hour and LOS F during the PM and Weekend peak hours. Traffic signal warrant analyses at the Woollomes Avenue/State Route 99 southbound ramps intersection determine that traffic signals are warranted for all intersection configurations. This would be considered a **potentially significant impact.** Signalizing and configuring this intersection to allow protected left-turn phasing; two a dedicated left-turn lanes for the westbound left-turn; and one through lane in each direction would improve operations at the Woollomes Avenue/State Route 99 Southbound Ramps intersection to an acceptable level of service of LOS B during the PM and Weekend peak hours, which reduces this

impact to a less than significant level However, due to the proximity of the intersections this improvement may not be feasible in conjunction with other improvements nearby. Therefore, the Woollomes Avenue/State Route 99 Southbound ramp intersection improvements shall be included in the Opening Year (2007) interim interchange improvement in the PSR required in mitigation measure **MM 3.12-1c**. The PSR/PR shall evaluate and recommend improvements to this intersection, which would improve the operations at the Woollomes Avenue/State Route 99 Southbound Ramp intersection to acceptable levels of service of LOS B or better. Therefore, the Woollomes Avenue/State Route 99 Southbound Ramp intersection level of service impact under "Near-Term (2010) Project" conditions would be reduced to a **less than significant level**.

Woollomes Avenue/Lexington Street Intersection. The Woollomes Avenue/Lexington Street intersection would operate at an unacceptable LOS D during the Weekend peak hours. Traffic signal warrant analyses at the Woollomes Avenue/Lexington Street intersection determine that traffic signals are warranted for all intersection configurations. This would be considered a **potentially significant impact.** However, implementation of the mitigation measure **MM 3.12-1f** would require the project applicant to signalize the intersection and make configuration improvements as recommended in the PSR. These improvements would improve the operations at the Woollomes Avenue/Lexington Street intersection to an acceptable level of service of LOS C or better. Therefore, the Woollomes Avenue/Lexington Street intersection level of service impact under "Near-Term (2010) Project" conditions would be reduced to a **less than significant level**.

Roadway Segment Level of Service

The results of the roadway segment LOS calculations for "Near-Term (2010) Project" conditions plus project conditions are shown below in **Table 3.12-15, Roadway Segment Level of Service Under Near-Term (2010) Project Conditions.**

TABLE 3.12-15
ROAD SEGMENT LEVEL OF SERVICE UNDER NEAR-TERM (2010) PROJECT CONDITIONS

Road Segment and Direction	Lanes & Median		AM		PM		Weekend	
			Vol	LOS	Vol	LOS	Vol	LOS
WOOLLOMES AVENUE BETWEEN:								
Albany Street and Dover Parkway	EB	1U	285	C	295	C	382	C
	WE	1U	263	C	331	C	385	C
Dover Parkway and Site Access	EB	1U	339	C	389	C	584	C
	WE	1U	398	C	540	D (C)	689	D (C)
Site Access and Garzoli Avenue	EB	1U	488	C	718	D (C)	967	D (C)
	WE	1U	514	D (C)	704	D (C)	1007	D (C)
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	584	D (C)	921	F (C)	1110	D (C)
	WB	1U	607	D (C)	839	F (C)	1101	D (C)

Road Segment and Direction	Lanes & Median		AM		PM		Weekend	
			Vol	LOS	Vol	LOS	Vol	LOS
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	433	C	702	D (C)	905	D (C)
	WB	1U	601	D (C)	831	F (C)	1045	D (C)
NB SR 99 Ramps and Lexington Street	EB	1U	385	C	501	D (C)	533	C
	WB	1U	317	C	420	C	483	C
ALBANY STREET/STRADLEY AVENUE BETWEEN:								
Schuster Road and Woollomes Avenue	NB	1U	86	C	107	C	117	C
	SB	1U	89	C	83	C	116	C
Woollomes Avenue and 1st Street	NB	1U	209	C	307	C	228	C
	SB	1U	226	C	241	C	241	C
GARZOLI AVENUE BETWEEN:								
Pond Road and Schuster Road	NB	1U	136	C	170	C	-	-
	SB	1U	102	C	193	C	-	-
Schuster Road and Woollomes Avenue	NB	1U	177	C	277	C	256	C
	SB	1U	141	C	209	C	224	C
POND ROAD BETWEEN:								
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	126	C	172	C	-	-
	WB	1U	141	C	145	C	-	-
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	106	C	85	C	-	-
	WB	1U	125	C	151	C	-	-

Source: Peters Engineering Group 2007

Five of the 24 study roadway segments would operate at unacceptable levels of service of LOS D or worse, during the AM, PM and/or Weekend peak hours, under "Near-Term (2010) Project" conditions. The roadway segment deficiencies under "Near-Term (2010) Project" conditions are discussed in detail below.

Woollomes Avenue between Dover Parkway and Site Access. Westbound Woollomes Avenue between Dover Parkway and the project site access would operate at an unacceptable LOS D during the PM and Weekend peak hours.

Woollomes Avenue between Site Access and Garzoli Avenue. Eastbound Woollomes Avenue between Site Access and Garzoli Avenue would operate at an unacceptable LOS D during the PM and Weekend peak hours. Westbound Woollomes Avenue between Site Access and Garzoli Avenue would operate at an unacceptable LOS D during the AM, PM, and Weekend peak hours.

Woollomes Avenue between Garzoli Avenue and Southbound State Route 99 Ramps. Eastbound and Westbound Woollomes Avenue between Garzoli Avenue and Southbound State Route 99 Ramps would operate at an unacceptable LOS D during the AM and PM peak hours and LOS F during the PM peak hours.

Woollomes Avenue between Southbound State Route 99 Ramps and Northbound State Route 99 Ramps. Eastbound Woollomes Avenue between Southbound State Route 99 Ramps and Northbound State Route 99 Ramps would operate at an unacceptable LOS D during the PM and Weekend peak hours. Westbound Woollomes Avenue between Southbound State Route 99 Ramps and Northbound State Route 99 Ramps would operate at an unacceptable LOS D during the AM and weekend peak hours, LOS F during the PM peak hour.

Woollomes Avenue between Northbound State Route 99 Ramps and Lexington Street. Eastbound Woollomes Avenue between Northbound State Route 99 Ramps and Lexington Street would operate at an unacceptable LOS D during the PM.

Unacceptable levels of service along the above roadway segments would be considered a **potentially significant impact**. However, implementation of mitigation measures **MM 3.12-1a** through **MM 3.12-1f**, and **MM 3.12-2** would improve operations at all study roadway segments to LOS C. Therefore, the roadway segment impact under "Near-Term (2010) Project" conditions would be reduced to a **less than significant** level.

Intersection Queue Lengths During Railroad Pre-emption Event

Impact 3.12-3 Implementation of the proposed project would increase traffic volumes in the vicinity of a railroad crossing located approximately 60 feet east of the Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street) intersection, which could result in lengthy queues that may block the railroad tracks, other nearby intersections, and extend traffic back up onto State Route 99 during a railroad pre-emption event. Therefore, this would be considered a **less than significant impact.**

A one and one-half mile long train that is traveling at a speed of ten miles per hour creates a railroad preemption event that lasts approximately nine minutes in duration. Implementation of mitigation measures **MM 3.12-1c**, **MM 3.12-1d,** and **MM 3.12-1f** would likely result in the signalization of intersections located within the vicinity of the existing railroad crossing located approximately 60 feet east of the Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street) intersection. A nine minute railroad pre-emption event during peak hours may result in lengthy queues that may temporarily block the railroad tracks, nearby intersections, and/or back up traffic onto State Route 99. Therefore, signalization of these intersections needs to be closely coordinated with the operations of the railroad crossing.

Queuing at the Railroad Tracks

During a railroad pre-emptive event, a conservative scenario would result in a westbound queues of four vehicles (approximately 85 feet long), which would extend from the

Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street) intersection through the existing railroad crossing to the city limits east of the railroad tracks. The distance between the Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street) intersection and railroad tracks is approximately 60 feet, which could accommodate queuing of approximately two vehicles. Therefore, signalization of the Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street) intersection must allow at least two vehicles and preferably four vehicles to clear from the westbound queue during a railroad preemptive event.

Assuming a saturation flow rate of 1,500 vehicles per hour, approximately nine seconds are required to clear two vehicles and approximately 15 seconds are required to clear four vehicles. Based on clearance times of four seconds to clear two to four vehicles on a yellow light, one second to clear two to four vehicles on a red light, and nine seconds to clear two vehicles and 15 seconds to clear four vehicles on a green light, it would take a minimum of 14 seconds to clear two vehicles and 20 seconds to clear four vehicles. According to Higgins Associates, the detector unit at the railroad crossing typically provides a 35 second advance notification that a train is approaching the intersection. Approximately 20 seconds are available to clear the tracks before the crossing gates are lowered to stop traffic flow. Therefore, there would be sufficient time to allow clearance of the westbound Woollomes Avenue traffic prior to the train arriving at the Woollomes Avenue railroad crossing.

Queuing at Nearby Intersections and State Route 99

Railroad preemption events result in a temporary back up of traffic flow, which can result in lengthy queues that can block other nearby intersections such as, Woollomes Avenue/Garzoli Avenue; Woollomes Avenue/State Route 99 Southbound On-Ramp; Woollomes Avenue/State Route 99 Northbound On-Ramp; Woollomes Avenue/State Route 99 Northbound Off-Ramp (High Street); and Woollomes Avenue/Lexington Street. These queues can back up into the mainline stream of traffic on State Route 99. The queue lengths along Woollomes Avenue in the eastbound and westbound direction and queue lengths at the State Route 99 off ramps would pose a significant hazard. A railroad preemption event that results in queues on westbound Woollomes Avenue that exceed approximately 525 feet would extend to the Woollomes Avenue/Lexington Street intersection and queues on eastbound Woollomes Avenue that exceed approximately 425 feet would extend to the Woollomes Avenue/State Route 99 Southbound Ramps intersection. Northbound queues on the State Route 99 Northbound Off-Ramp (High Street) that exceed approximately 1,000 feet would back up onto State Route 99 and southbound queues on the State Route 99 off ramp that exceed approximately 1,150 feet would back up onto the highway. Peters Engineering analyzed the affect of a railroad preemptive event during weekday AM and PM peak hours and weekend peak hour under the following scenarios: "Existing" conditions; "Existing Plus Opening Year (2007)

Approved Projects" conditions; "Opening Year (2007) Project" conditions; "Existing Plus Near-Term (2010) Approved Projects" conditions; "Near-Term (2010) Project" conditions; and "Cumulative (2030) Project" conditions, as shown in **Table 3.12-16, Queue Length Summary Under Existing Conditions, Existing Plus Opening Year (2007) Approved Projects Conditions, and Existing Plus Near-Term (2010) Approved Projects Conditions** and **Table 3.12-17, Queue Length Summary Under Opening Year (2007) Project Conditions, Near-Term (2010) Project Conditions and Cumulative (2030) Project Conditions.**

Existing, Existing Plus Opening Year (2007 Approved Project Conditions, and Existing Plus Near-Term (2010) Approved Projects Conditions

During a railroad preemptive event, lengthy queues would occur on eastbound and westbound Woollomes Avenue, and on the State Route 99 Northbound Off Ramp under "Existing" conditions, "Existing Plus Opening Year (2007) Approved Projects" conditions, and/or "Existing Plus Near-Term (2010) Approved Projects" conditions, as shown in **Table 3.12-16, Queue Length Summary Under Existing Conditions, Existing Plus Opening Year (2007) Approved Projects Conditions, and Existing Plus Near-Term (2010) Approved Projects Conditions.**

TABLE 3.12-16
QUEUE LENGTH SUMMARY UNDER EXISTING CONDITIONS, EXISTING PLUS OPENING YEAR (2007) APPROVED PROJECTS CONDITIONS, AND EXISTING PLUS NEAR-TERM (2010) APPROVED PROJECTS CONDITIONS

Queue area	Existing Conditions			Existing Plus Opening Year (2007) Approved Projects Conditions			Existing Plus Near-Term (2010) Approved Projects Conditions		
	AM	PM	Weekend	AM	PM	Weekend	AM	PM	Weekend
WOOLLOMES AVENUE									
Eastbound	590	1000	636	734	1120	1015	795	1200	1160
Westbound	510	698	564	690	796	582	760	814	705
STATE ROUTE 99									
Northbound Off Ramp	650	700	570	1000	1070	600	1250	1300	1000
Southbound Off Ramp	50	108	72	50	144	188	162	300	203

Source: Peters Engineering Group 2007

The lengthy queues that would affect nearby intersections and/or State Route 99 under "Existing" conditions, "Existing Plus Opening Year (2007) Approved Projects" conditions, and "Existing Plus Near-Term (2010) Approved Projects" conditions are discussed below:

Eastbound Woollomes Avenue. The eastbound queues along Woollomes Avenue would extend more than 425 feet during weekday and weekend peak hours under "Existing" conditions, "Existing Plus Opening Year (2007) Approved Projects" conditions, and "Existing Plus Near-Term (2010) Approved Projects" conditions. This would allow traffic to back up into the Woollomes Avenue/State Route 99 Southbound Ramps intersection.

Westbound Woollomes Avenue. The westbound queues along Woollomes Avenue would extend more than 525 feet during weekday and weekend peak hours under "Existing" conditions, "Existing Plus Opening Year (2007) Approved Projects" conditions, and "Existing Plus Near-Term (2010) Approved Projects" conditions, with the exception of during the weekday AM peak hour under "Existing" conditions. This would allow traffic to back up into the Woollomes Avenue/Lexington Street intersection.

State Route 99 Northbound Off Ramp. The State Route 99 Northbound Off Ramp queues would extend 1,000 feet or more during the weekday and weekend peak hours under "Existing Plus Opening Year (2007) Approved Projects" conditions and "Existing Plus Near-Term (2010) Approved Projects" conditions. This would allow traffic to back up into the mainline of traffic flow on northbound State Route 99.

Opening Year (2007) Project Conditions, Near-Term (2010) Project Conditions and Cumulative (2030) Project Conditions

During a railroad preemptive event, lengthy queues would occur on westbound and eastbound Woollomes Avenue, and on State Route 99 Northbound and Southbound Off Ramps under "Opening Year (2007) Project" conditions, "Near-Term (2010) Project" conditions and/or "Cumulative (2030) Project" conditions, as shown in **Table 3.12-17, Queue Length Summary Under Opening Year (2007) Project Conditions, Near-Term (2010) Project Conditions and Cumulative (2030) Project Conditions.**

TABLE 3.12-17
QUEUE LENGTH SUMMARY UNDER OPENING YEAR (2007) PROJECT CONDITIONS, NEAR-TERM (2010) PROJECT CONDITIONS AND CUMULATIVE (2030) PROJECT CONDITIONS

Queue area	Opening Year (2007) Project Conditions			Near-Term (2010) Project Conditions			Cumulative (2030) Project Conditions		
	AM	PM	Weekend	AM	PM	Weekend	AM	PM	Weekend
WOOLLOMES AVENUE									
Eastbound	>1320	>1320	>1320	>1320	>1320	>1320	>1320	>1320	>1320
Westbound	910	1055	1077	963	1132	1118	>1320	>1320	>1320
STATE ROUTE 99									

Queue area	Opening Year (2007) Project Conditions			Near-Term (2010) Project Conditions			Cumulative (2030) Project Conditions		
	AM	PM	Weekend	AM	PM	Weekend	AM	PM	Weekend
Northbound Off Ramp	>1320	>1320	>1320	>1320	>1320	>1320	>1320	>1320	>1320
Southbound Off Ramp	300	508	800	500	736	830	>1320	>1320	>1320

Source: Peters Engineering Group 2007

The lengthy queues that would affect nearby intersections and/or State Route 99 under "Opening Year (2007) Project" conditions, "Near-Term (2010) Project" conditions and/or "Cumulative (2030) Project" conditions are discussed below:

Eastbound Woollomes Avenue. The eastbound queues along Woollomes Avenue would extend more than 425 feet during weekday and weekend peak hours under "Opening Year (2007) Project" conditions, "Near-Term (2010) Project" conditions and "Cumulative (2030) Project" conditions. This would allow traffic to back up into the Woollomes Avenue/State Route 99 Southbound Ramps intersection.

Westbound Woollomes Avenue. The westbound queues along Woollomes Avenue would extend more than 525 feet during weekday and weekend peak hours under "Opening Year (2007) Project" conditions, "Near-Term (2010) Project" conditions and "Cumulative (2030) Project" conditions. This would allow traffic to back up into the Woollomes Avenue/Lexington Street intersection.

State Route 99 Northbound Off Ramp. The State Route 99 Northbound Off Ramp queues would extend 1,000 feet or more during the weekday and weekend peak hours under "Opening Year (2007) Project" conditions, "Near-Term (2010) Project" conditions and "Cumulative (2030) Project" conditions. This would allow traffic to back up into the mainline of traffic flow on northbound State Route 99.

State Route 99 Southbound Off Ramp. The State Route 99 Southbound Off Ramp queues would extend 1,150 feet or more during the weekday and weekend peak hours under "Cumulative (2030) Project" conditions. This would allow traffic to back up into the mainline of traffic flow on Southbound State Route 99.

The queue analysis provided above is based on traffic volumes. Driver behavior also plays a factor when back ups begin to occur. High Street provides an alternate route that passes under the railroad track north of Woollomes Avenue. A majority of the drivers on eastbound Woollomes Avenue and State Route 99 Northbound Off Ramp may utilize High Street during a railroad preemptive preemption event in order to avoid delays. This would redistribute eastbound Woollomes Avenue through movements to left-turn movements and

northbound State Route 99 Northbound Off Ramp right-turn movements would be redistributed to through movements at the Woollomes Avenue/State Route 99 Off Ramp (High Street) intersection. In order to facilitate the redistribution of traffic and minimize the queue lengths, separate right-turn, through and left-turn lanes are recommended at State Route 99 Northbound and Southbound Off Ramps at Woollomes Avenue. Designing the off ramps to have separate right-turn, though, and left-turn lanes would reduce the queues along Woollomes Avenue and State Route 99 Northbound and Southbound Off Ramps, as shown in **Table 3.12-18, Mitigated Queue Length Summary Under Opening Year (2007) Project Conditions, Near-Term (2010) Project Conditions and Cumulative (2030) Project Conditions**.

TABLE 3.12-18
MITIGATED QUEUE LENGTH SUMMARY UNDER OPENING YEAR (2007) PROJECT CONDITIONS, NEAR-TERM (2010) PROJECT CONDITIONS AND CUMULATIVE (2030) PROJECT CONDITIONS

Queue area	Opening Year (2007) Project Conditions			Near-Term (2010) Project Conditions			Cumulative (2030) Project Conditions		
	AM	PM	Weekend	AM	PM	Weekend	AM	PM	Weekend
WOOLLOMES AVENUE									
Eastbound	125	375	300	250	400	425	200	324	300
Westbound	1175	>1320	>1320	1200	>1320	>1320	>1320	>1320	>1320
STATE ROUTE 99									
Northbound Off Ramp	100	150	175	150	250	225	325	400	100
Southbound Off Ramp	25	25	25	25	25	25	25	25	25

Source: Peters Engineering Group 2007

Implementation of mitigation measure **MM 3.12-1c** requires that the project applicant prepare a PSR/PR for the Woollomes Avenue/State Route 99 interchange. The PSR/PR shall include a conceptual configuration that has been accepted by Caltrans and identify a recommended alternative for reconstruction of the interchange in order to improve operations to an acceptable level of service, which may include relocating State Route 99 northbound on-ramp to the east, connecting to High Street; relocating State Route 99 southbound ramps to the west; converting northbound High Street to a one-way roadway in the vicinity of the State Route 99 northbound on-ramp; and redistributing southbound traffic on High Street to Lexington Street. Designing and striping the State Route 99 Southbound and Northbound Off-Ramps to provide separate left-turn, through, and right-turn lanes would facilitate the redistribution of traffic during a railroad preemptive preemption event and minimize queue lengths on northbound and southbound State Route

99 and eastbound Woollomes Avenue. However, westbound Woollomes Avenue would continue to extend more than 525 feet into the Woollomes Avenue/Lexington Avenue intersection under all project condition scenarios. The long queue lengths blocking the Woollomes Avenue/Lexington Avenue intersection combined with the redistribution of southbound High Street traffic onto Lexington Street may result in a decrease in operations at the Woollomes Avenue/Lexington Street intersection beyond the deficient levels of service discussed in **Impact 3.12-2.** However, implementation of mitigation measure **MM 3.12-1f** would require that the project applicant signalize the Woollomes Avenue/Lexington Avenue intersection and make configuration improvements as recommended in the PSR/PR, which would improve the level of service to an acceptable level of service of LOS C or better. Furthermore, the PSR/PR is required to evaluate the affect of the final approved improvements will have on the railroad crossing. Therefore, the queue lengths associated with the railroad crossing would be reduced to a **less than significant level** with the incorporation of mitigation incorporated herein.

Parking Capacity

Impact 3.12-4 Buildout of the proposed project will result in a need for on-site parking facilities. This is considered a **less than significant** impact.

The proposed project will be required to provide sufficient on-site parking supply that meets the City's standards. According to the City's parking regulations (Delano Development Code, Section 20.13), a shopping center with less than 750,000 square feet of gross leasable area requires one parking space per 250 square feet of gross floor area. Therefore, the proposed project would require approximately 1,824 parking spaces. As the proposed project includes over 2,000 spaces, the off-street parking requirement would be satisfied and the impact is considered **less than significant**.

Bicycle Facilities

Impact 3.12-5 The proposed project would create a demand for bicycle facilities, including bicycle lanes along the project frontage and on-site bicycle facilities (e.g., racks and lockers). This is considered a **potentially significant** impact.

The preliminary site plan makes no apparent provision for bicycle facilities. However, Bicycle Facilities Policy 3a in the *Delano General Plan* states that bike lanes shall be implemented on improved street segments. In addition, Policy 5 requires that secure bicycle parking facilities be provided at all commercial development as a standard condition of project approval. If bicycle facilities are not incorporated as part of the proposed project, this would be considered a **potentially significant** impact. Therefore, the following mitigation measure shall be required.

Mitigation Measure

MM 3.12-5 Subject to review and approval by the City of Delano, the following bicycle facilities shall be incorporated into the proposed project and shown on final improvement plans:

- Class II bicycle lanes along the project street frontages.
- Bicycle racks and/or lockers to accommodate bicycle travel by customers and employees. Bicycle parking facilities should be located in high visibility areas in order to encourage bicycle travel and discourage theft and vandalism.

Implementation of the above mitigation measure will reduce this impact to a **less than significant** level.

Pedestrian Facilities

Impact 3.12-6 The proposed project would include a continuous sidewalk along Woollomes Avenue; however, the preliminary site plan does not indicate pedestrian crossing facilities at the main site access intersection with Woollomes Avenue, presenting a potential safety hazard to pedestrian circulation. This is considered a **potentially significant** impact.

The proposed project includes construction of a continuous sidewalk along Woollomes Avenue. However, pedestrian crossings are not shown at the Woollomes Avenue/Site Access intersection. Pedestrian Facilities Policy 11 in the *Delano General Plan* states that pedestrian signals should be included as an integral part of traffic signal installation. If pedestrian crosswalks and signals are not incorporated as part of the proposed project, this would be considered a **potentially significant** impact. Therefore, the following mitigation measure shall be required.

Mitigation Measure

MM 3.12-6 Subject to review and approval by the City of Delano, pedestrian crosswalks and traffic signals shall be provided at all four legs of the Woollomes Avenue/Site Access intersection. These improvements shall be incorporated into final improvement plans prior to approval by the City of Delano.

Implementation of the above mitigation measure will reduce this impact to a **less than significant** level.

Public Transit Facilities

Impact 3.12-7 Due to demand generated by the proposed project, existing transit facilities may be inadequate to serve the project site. This is considered a **potentially significant** impact.

The City of Delano's Public Transportation System provides responsive fixed route bus and demand responsive/reservation public transportation services to Delano and the immediate area surrounding the City. The fixed route system features three routes but none of these routes currently serve the project area. The nearest bus stop is located at 325 Lexington Street, approximately one-mile north of the project site. Transportation System Policy 4 in the *Delano General Plan* indicates that large development projects shall be encouraged to incorporate transit passenger facilities. According to the City of Delano, transit service would be extended to the project site. Due to the projected volume of customer traffic generated by the proposed project, the following mitigation measure would ensure that the proposed project does not have a **potentially significant** impact on transit facilities.

Mitigation Measure

MM 3.12-7 The project applicant shall construct a new bus stop along the project frontage at a location approved by the City of Delano, including amenities such as a shelter and benches. The project applicant shall work with the City of Delano to extend transit service to the project site. These improvements shall be incorporated into final improvement plans.

Implementation of the above mitigation measure will reduce the impact to a **less than significant** level.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Level of Service Under Cumulative (2030) Project Conditions

Impact 3.12-8 Implementation of the proposed project combined with approved and pending projects anticipated to be completed by the year 2030 would result in the cumulative generation of approximately 96,334 trips, which would result in unacceptable levels of service during the AM, PM and/or Weekend peak hours at all of the 14 study intersections and 11 study roadway segments. This is considered a **significant cumulative impact.**

Cumulative Trip Generation

The distribution of project traffic to the adjacent road network was performed by manual methods based on review of the traffic volumes projected using the Kern County travel model. Kern COG maintains a computerized traffic model for use in forecasting future traffic volumes based on buildout of land uses contained within the approved General Plan. Year 2030 traffic volumes were projected by assuming a growth rate of two percent per year applied to the existing traffic volumes, in addition to pending projects. The resulting traffic volumes were typically comparable to, and slightly greater than, the volumes resulting from the traffic model projections. **Table 3.12-19, Future Projects** summarize the projected cumulative traffic volumes.

TABLE 3.12-19
FUTURE CUMULATIVE PROJECTS

Land Use	ITE Code	Units	Peak Hour Traffic Volumes						Weekday Traffic Volumes
			AM		PM		Weekend		
			Enter	Exit	Enter	Exit	Enter	Exit	
Delano Vineyard Plaza Phase II (Pacific Advisors) (Shopping Center)	820	599,000 sq. ft.	377	241	1,079	1,169	1,549	1,429	25,722
Delano Marketplace II (Shopping Center)	820	549,000 sq. ft.	342	219	980	1,061	1,406	1,298	23,360
Delano Marketplace III (Shopping Center)	820	541,658 sq. ft.	341	218	955	1,057	1,400	1,293	23,260
Delano Marketplace II (Low-Rise Apartment)	221	112 Units	13	48	49	27	14	52	962
Delano Marketplace II (Single Family Detached Housing)	210	141 Homes	27	79	90	53	72	61	1,350
Delano Marketplace III (Single Family Detached Housing)	210	195 Homes	37	110	124	73	99	85	1,868
Reynen & Bardis/Villas at Vintage Park (Annexation)Single Family Detached Housing	210	1,671 Homes	314	940	1,064	625	849	723	15,992
Centex Homes/Workman Bros.Single Family Detached Housing	210	399 Homes	75	225	254	149	203	173	3,820
		Totals	**1,526**	**2,080**	**4,535**	**4,214**	**5,592**	**5,114**	**96,334**

Intersection Level of Service

The results of the intersection LOS calculations for "Cumulative (2030) Project" conditions are shown below in **Table 3.12-20, Intersection Level of Service Under Cumulative (2030) Project Conditions.**

TABLE 3.12-20
INTERSECTION LEVEL OF SERVICE UNDER CUMULATIVE (2030) PROJECT CONDITIONS

Intersections	Level of Service		
	AM	PM	Weekend
Woollomes Avenue/Albany Street	F (B)	F (C)	F (C)
Woollomes Avenue/Dover Parkway	F (B)	F (D)	F (D)
Woollomes Avenue/Site Access	F (B)	F (D)	F (D)
Woollomes Avenue/Garzoli Avenue	F (A)	F (C)	F (C)
Woollomes Avenue/SR 99 SB Ramps	F (A)	F (C)	F (C)
Woollomes Avenue/SR 99 NB On-Ramp	C (B)	F (C)	F (D)
Woollomes Avenue/SR 99 NB Off-Ramp (High Street)	F (B)	F (C)	F (D)
Woollomes Avenue/Lexington St.	C (B)	F (B)	F (B)
Pond Road/SR 99 NB Ramps	F (B)	F (C)	-
Pond Road/SR 99 SB Ramps	F (B)	F (C)	-
Pond Road/Stradley Avenue	D (B)	F (C)	-
Pond Road/Garzoli Avenue	F (C)	F (C)	-
Schuster Road/Stradley Avenue	F (B)	F (C)	-
Schuster Road/Garzoli Avenue	E (B)	F (B)	-

Source: Peters Engineering Group 2006

Notes: NB = Northbound; SB = Southbound. Mitigated LOS shown in parentheses. See Discussion for associated improvements

All of the 14 intersections would operate at an unacceptable level of service of LOS D or worse, during the AM, PM, and/or Weekend peak hours, under "Cumulative (2030) Project" conditions. The intersection deficiencies under cumulative project conditions are discussed below.

Roadway Segment Level of Service

The results of the roadway segment LOS calculations for "Cumulative (2030) Project" conditions are shown below in **Table 3.12-21, Roadway Segment Level of Service Under Cumulative (2030) Project Conditions.**

TABLE 3.12-21
ROAD SEGMENT LEVEL OF SERVICE UNDER CUMULATIVE (2030) PROJECT CONDITIONS

Road Segment and Direction	Lanes & Median		AM		PM		Weekend	
			Vol	LOS	Vol	LOS	Vol	LOS
WOOLLOMES AVENUE BETWEEN:								
Albany Street and Dover Parkway	EB	1U	655	D (C)	1496	F (C)	1597	F (C)
	WE	1U	718	D (C)	1570	F (C)	1603	F (C)
Dover Parkway and Site Access	EB	1U	812	F (C)	2094	F (D)	2186	F (D)
	WE	1U	1001	F (C)	2254	F (D)	2340	F (D)
Site Access and Garzoli Avenue	EB	1U	962	F (C)	2336	F (D)	2698	F (F)
	WE	1U	1128	F (C)	2409	F (D)	2721	F (F)
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	1190	F (C)	2494	F (E)	2735	F (F)
	WB	1U	1244	F (C)	2539	F (E)	2857	F (F)
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	960	F (C)	1956	F (D)	2079	F (D)
	WB	1U	1102	F (C)	1985	F (D)	2196	F (D)
NB SR 99 Ramps and Lexington Street	EB	1U	510	D (C)	1013	F (C)	1016	F (C)
	WB	1U	513	D (C)	884	F (C)	959	F (C)
ALBANY STREET/STRADLEY AVENUE BETWEEN:								
Schuster Road and Woollomes Avenue	NB	1U	424	C	523	D (C)	626	D (C)
	SB	1U	344	C	562	D (C)	704	D (C)
Woollomes Avenue and 1st Street	NB	1U	598	D (C)	973	F (C)	1029	F (C)
	SB	1U	625	D (C)	960	F (C)	1185	F (D)
GARZOLI AVENUE BETWEEN:								
Pond Road and Schuster Road	NB	1U	378	C	910	F (C)	-	-
	SB	1U	564	D (C)	749	D (C)	-	-
Schuster Road and Woollomes Avenue	NB	1U	526	D (C)	618	D (C)	297	C
	SB	1U	293	C	761	E (C)	395	C
POND ROAD BETWEEN:								

Road Segment and Direction	Lanes & Median		AM		PM		Weekend	
			Vol	LOS	Vol	LOS	Vol	LOS
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	799	E (C)	777	E (C)	-	-
	WB	1U	410	C	999	F (C)	-	-
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	475	C	395	C	-	-
	WB	1U	316	C	732	D (C)	-	-

Source: Peters Engineering Group 2006

Notes: Vol. – Volume; U – Undivided road; EB – Eastbound; WB – Westbound; NB – Northbound; SB – Southbound.

Impact 3.12-1 and **Impact 3.12-2** identify mitigation measures necessary to improve the intersection and roadway segment level of service deficiencies under "Opening Year (2007) Project" conditions and "Near-Term (2010) Project" conditions, respectively. These improvements would redistribute traffic volumes. The proposed project plus pending and approved projects anticipated to be completed by the year 2030 would result in the generation of approximately 96,334 cumulative trips on the improved intersections and roadway segments. The trips generated by cumulative development would reduce the operations of all of the study intersections and all but one of the study roadway segments to an unacceptable level of service. This would be considered a **significant cumulative impact**. The following mitigation measure would improve operations of the study intersections and roadway segments within acceptable levels of service.

Mitigation Measure

MM 3.12-8a The project applicant shall pay their proportionate fair share contribution towards the following improvements prior to occupancy of the proposed project. Fees applicable to the proposed project would include the applicable "per trip" traffic impact fees for the following improvements in accordance with the most recent City of Delano traffic impact fee program. Fees applicable to the proposed project would include the proposed "per trip" traffic impact fee of approximately $237.00 per vehicle trip and approximately $66.93 per trip for the proposed improvements to the Woollomes Avenue/State Route 99 interchange, which shall be paid to the City prior to occupancy of the proposed project. An update to the City of Delano Impact Fee Program is proposed for adoption by the City Council in May 2007.

- **Woollomes Avenue between Albany Street and Lexington Street**. Construct Woollomes Avenue to accommodate three through travel lanes

in each direction. Coordinate all traffic signals on Woollomes Avenue between Albany Street and Lexington Street.

- **Woollomes Avenue/Albany Street Intersection**. Signalize and construct the intersection to provide two southbound left-turn lanes; protected left-turn phasing; and dedicated right-turn lanes. Any interim intersection improvements (i.e. **MM 3.12-2**) constructed by the project applicant that can be incorporated into the ultimate intersection configuration shall be credited against the fair share contribution of the traffic mitigation fees.

- **Woollomes Avenue/Dover Parkway Intersection**. Signalize and construct the intersection to accommodate two left-turn lanes and protected left-turn phasing on all four approaches; three through lanes; and one eastbound right-turn lane.

- **Woollomes Avenue/Site Access Intersection**. Signalize and construct the intersection to accommodate protected left-turn phasing in the eastbound and westbound directions; two northbound left-turn lanes, two westbound left-turn lanes (350 feet), and two eastbound left-turn lanes (required if modification of the existing driveway on the north side of Woollomes Avenue is feasible); three through lanes; and one eastbound right-turn lane and westbound right-turn lane. Coordinate the traffic signals with the SR 99 ramp intersections.

- **Woollomes Avenue/Lexington Intersection**. Signalize and construct the intersection to accommodate protected left-turn phasing and a dedicated left-turn lane for the northbound left turn; and two eastbound left-turn lanes.

- **Schuster Road/Stradley Road Intersection**. Provide all-way stop sign control at the intersection of Schuster Road and Stradley Avenue.

- **Pond Road/Stradley Road Intersection** - Provide all-way stop sign control at the intersection of Pond Road and Stradley Avenue.

- **Schuster Road/Garzoli Avenue Intersection**. Signalize and reconfigure the intersection to provide protected left-turn phasing and a dedicated left-turn lane for the northbound left turn.

- **Pond Road/Garzoli Avenue Intersection**. Signalize and reconfigure the intersection to provide protected left-turn phasing and dedicated left-turn lanes; and two southbound left-turn lanes.

- **Pond Road/State Route 99 Southbound Ramps**. Signalize and reconfigure the intersection to provide protected left-turn phasing and dedicated left-turn lanes; and two eastbound left-turn lanes in accordance with Transportation Systems and Congestion Management Policy 7 of the *City of Delano General Plan*.

- **Pond Road/State Route 99 Northbound Ramps**. Signalize and reconfigure the intersection to provide protected left-turn phasing and dedicated left-turn lanes; and two northbound left-turn lanes in accordance with Transportation Systems and Congestion Management Policy 7 of the *City of Delano General Plan*.

Implementation of mitigation measure **MM 3.12-8a** would require the project applicant contribute applicable "per trip" traffic impact fees, prior to occupancy of the proposed project, toward a series of intersection, roadway, and interchange improvements required as a result of future development anticipated by the year 2030 in accordance with the City's most recent update to the traffic mitigation fee program. Payment of the traffic mitigation fees would satisfy the cumulative impact associated with the proposed project.

With implementation of mitigation measure **MM 3.12-8a**, the Woollomes Avenue/Dover Parkway and Woollomes Avenue/Site Access intersections would operate at LOS D during the PM and Weekend peak hour and the Woollomes Avenue/State Route 99 NB On-Ramp and Woollomes Avenue/State Route 99 NB Off-Ramp (High Street) intersections would operate at LOS D during the Weekend peak hour. Roadway Classification Standards Policy 11 in the *City of Delano General Plan* states that Freeway interchanges and high volume locations, where it is not feasible to achieve and maintain LOS C shall be designed to achieve and maintain LOS D for a period of at least 20 years following their construction. Woollomes Avenue from Lexington Avenue to Albany Street would be considered a high volume arterial due to the designation of commercial uses along the corridor in the *City of Delano General Plan* and the projected high turning movement volumes. According to Peters Engineering, mitigation measure **MM 3.12-8a** represents the recommended improvements along Woollomes Avenue that would be feasible at this location given the configuration of Woollomes Avenue under cumulative conditions (e.g. three travel lanes in each direction). Therefore, these intersections would operate within City standards under "Cumulative (2030) Project" conditions and this impact would be considered less than significant.

With implementation of mitigation measure **MM 3.12-8a**, the Albany Street roadway segment (both eastbound and westbound) between 1st Street and Woollomes Avenue would operate at LOS D during the Weekend peak hour. With implementation of this mitigation measure, Woollomes Avenue would operate at LOS D during the PM and Weekend peak hours between Dover Parkway and the Site Access and between SB State

Route 99 Ramps and NB State Route 99 Ramps in both the eastbound and westbound direction; at LOS D during the PM peak hour and Weekend peak hour in both the eastbound and westbound direction and at LOS F during the Weekend peak hour between the Site Access and Garzoli Avenue; and at LOS E during the PM peak hour in both the eastbound and westbound direction and LOS F during the Weekend peak hour between Garzoli Avenue and State Route 99 Ramps in both the eastbound and westbound direction.

According to Peters Engineering Group, in order to provide acceptable levels of service along Woollomes Avenue at those roadway segments that are operating below LOS D, four through lanes would be required in each direction. Traffic operations in urban areas with closely spaced intersections are governed by the operations of the intersections rather than the road segments themselves. During the peak periods when the intersections are operating at LOS D, these short road segments provide storage capacity for the intersections. Construction of more than three through lanes is not recommended as research indicates that the marginal capacity of additional lanes is not proportional to the number of additional lanes and that each additional lane diminishes the capacity at every signalized intersection along the roadway due to the following factors: longer yellow clearance intervals would be required to allow vehicles on cross streets to cross through the intersection, which would create longer red intervals and greater delays along Woollomes Avenue; longer pedestrian intervals would be required to allow sufficient time for pedestrians to cross Woollomes Avenue; and lane utilization factors would decrease as a result of drivers maneuvering for upcoming turning movements, which would result in certain through lanes being heavily utilized while other through lanes would be under utilized. According to Peters Engineering Group, the marginal benefits of a fourth through lane on Woollomes Avenue would not improve the level of service to acceptable levels of service. However, since Woollomes Avenue, between the Site access and the Southbound State Route 99 ramps, would operate at LOS F during the Weekend peak hour and would operate at LOS E during the PM peak hour and LOS F during the Weekend peak hour between Garzoli Avenue and State Route 99, even with the incorporation of mitigation, this would be considered a **significant and unavoidable cumulative impact** to these roadway segments.

Level of Service at the Woollomes Avenue/State Route 99 Interchange Under Cumulative (2030) Project Conditions

Impact 3.12-9 Implementation of the proposed project combined with approved and pending projects anticipated to be completed by the year 2030 would result in additional trips to the Woollomes Avenue/State Route 99 interchange, which is projected to operate at an unacceptable level of service. This is considered a **potentially significant cumulative impact.**

In addition to specific intersection and roadway segment improvements, the cumulative trips would result in the need for increased capacity at the Woollomes Avenue/ State Route 99 interchange. This would be considered a **potentially significant cumulative impact**. Implementation of mitigation measures **MM 3.12-1c** and **MM 3.12-1d** requires that the project applicant prepare a PSR/PR in accordance with Caltrans requirements for the Woollomes Avenue/State Route 99 interchange. The PSR/PR shall evaluate interchange options under "Opening Year (2007) Project" conditions and "Cumulative (2030) Project" conditions. The PSR/PR shall include a conceptual configuration that has been accepted by Caltrans and identify recommended alternatives for reconstruction of the interchange in order to improve operations to an acceptable level of service, including loop ramps for the ultimate interchange configuration to provide capacity under "Cumulative (2030) Project" conditions. The PSR/PR shall determine the equitable share contributions. Since the proposed project will contribute traffic to the Woollomes Avenue/State Route 99 interchange, the project applicant will required to contribute traffic impact fees toward the ultimate reconstruction of the interchange prior to operation of the proposed project. The following mitigation measure would ensure that the project applicant contribute their proportional "fair share" toward interchange improvements in accordance with the City of Delano Impact Fee Program.

Mitigation Measure

MM 3.12-8b The project applicant shall pay their proportionate fair share contribution towards the ultimate reconstruction of the Woollomes Avenue/State Route 99 interchange that is identified in the PSR/PR prepared as required by mitigation measure **MM 3.12-1c** prior to occupancy of the proposed project in accordance with the City of Delano's traffic mitigation fee program. Fees applicable to the proposed project would include the proposed "per trip" traffic impact fee of approximately $237 per vehicle trip and approximately $66.93 per trip for the proposed improvements to the Woollomes Avenue/State Route 99 interchange, which shall be paid to the City prior to occupancy of the proposed project. An update to the City of Delano Impact Fee Program is proposed for adoption by the City Council in May 2007. Contribution towards the ultimate interchange reconstruction shall be in accordance with Transportation Systems and Congestion Management Policy 7 of the *City of Delano General Plan*. Any interim improvements constructed by the project applicant that can be incorporated into the ultimate interchange configuration shall be credited against the fair share contribution of traffic impact fees that shall be determined in the PSR/PR.

Implementation of mitigation measure **MM 3.12-8b** would require the project applicant to contribute their proportionate "fair share" of traffic mitigation fees towards interchange improvements in accordance with the *City of Delano Impact Fee Program* required as a

result of cumulative development anticipated by the year 2030. Implementation of these improvements would improve operations at the intersection and roadway segments within the vicinity of the interchange to acceptable levels of service. Payment of the traffic mitigation fees would satisfy the cumulative impacts associated with the proposed project. Therefore, the cumulative traffic impact to the Woollomes Avenue/ State Route 99 interchange would be reduced to a **less than significant** level.

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Section 3.13
Utilities

This section of the RDEIR addresses existing utility and infrastructure systems within the City of Delano that would serve the project site. The analysis discusses the ability of existing or planned systems to accommodate the proposed project in terms of distribution and supply and identifies potential environmental impacts that could result from the need for new or expanded systems. The analysis is based primarily on information contained in the *City of Delano General Plan* (2005), *City of Delano Urban Water Management Plan* (2007), *City of Delano Development Cost and Fee Study* (2004), information provided by the City of Delano, and information provided by local service providers. **Section 3.8 Surface Water Hydrology and Water Quality** includes discussion of stormwater infrastructure impacts.

3.13.1 EXISTING SETTING

The City of Delano provides a range of public services to the community, including water and wastewater services and solid waste collection. Other utility services are provided by a variety of companies, including Southern California Edison, The Gas Company of Southern California, SBC Communications and Time-Warner Cable.

WATER

The project site is included in the water service area estimates for the *City of Delano Urban Water Management Plan* (UWMP).

Groundwater

The City of Delano is located within the San Joaquin Valley Groundwater Basin. Within this basin, the City is part of the Kern County Sub-basin, which is approximately 3,000 square miles. Principal rivers and streams within this Sub-basin include the Kern River and Poso Creek. According to the *City of Delano General Plan*, the Kern County Sub-basin has historically been considered in an overdraft condition. The *City of Delano General Plan* indicates that annual water levels range from no change to a decrease of approximately 30 feet. A major determining factor in the groundwater elevation of the Kern County Sub-basin is the amount of surface water that is available for agricultural use. During drought years, the agricultural entitlements from the State Water Project and the Central Valley Project are sharply curtailed, which requires farmers to use groundwater for irrigation purposes. The average water level in the Kern County Sub-basin has remained essentially unchanged from 1970 to 2000. The Kern County Water Agency estimates that total water in storage to be 40 million acre-feet (City of Delano Urban Water Management Plan 2005).

Groundwater Quality

In general, the groundwater quality of the City is relatively high. Prior to agricultural and urban development, groundwater moved from areas of recharge along the eastern rim of

the San Joaquin Valley to areas of discharge along the Valley axis. Recharge was primarily by seepage from stream flows. Under present conditions, groundwater is recharged primarily from snow pack. Groundwater generally flows toward the southwest. Aquifers are generally quite thick in San Joaquin Valley Sub-basins with groundwater wells commonly exceeding 1,000 feet in depth. Typical well yields in the San Joaquin Valley range from 300 gallons per minute (gpm) to 2,000 gpm with yields of 4,000 gpm possible. Most wells draw water from 750 to 1,400 feet (City of Delano Urban Water Management Plan 2005).

Water Supply and Distribution

Water service is currently provided to the project site through an existing 12-inch water line, which runs along Woollomes Avenue. The City of Delano operates the domestic water system for the City, which is based entirely on groundwater. According to the *City of Delano Urban Water Management Plan*, there are currently eleven wells available for use by the City, which pump water into a grid distribution system.

According to the *Urban Water Management Plan*, the City can produce 14,558 gallons per minute (gpm), the equivalent of 21 million gallons per day (mgd) or about 23,360 acre-feet per year. **Table 3.13-1, Existing Water Wells**, lists the water production of current wells serving the City of Delano. The City's current maximum daily demand is approximately 13.0 million gallons per day (mgd). Subtracting current maximum demand (13.0 mgd) of water from production capacity (21 mgd) results in a gross surplus of 8.0 mgd or 9,125 acre-feet per year. In addition, the City currently maintains five storage reservoirs within the distribution system for a total capacity of 10.6 million gallons and a total boosting capacity of 8,950 gallons per minute (gpm). Furthermore, the City is currently in the design stage for construction of an additional well which will be located on the northwest corner of the Bowman Avenue/Garces Highway intersection, which would have an approximate capacity of 1,200 gpm.

TABLE 3.13-1
EXISTING WATER WELLS

Well Number	Well Depth (feet)	Capacity (gpm)
4	1,000	850
12	1,000	750
14	1,000	1,125
19	1,400	1,100
20	1,400	1,117
21	1,400	1,800
22	1,400	1,614
23	N/A	2,400

Well Number	Well Depth (feet)	Capacity (gpm)
24	N/A	1,102
25	N/A	1,700
26	N/A	1,000
	Total	**14,558**

Source: Urban Water Management Plan 2006

Water Quality

According to the *Urban Water Management Plan*, the City is faced with Arsenic concentration problems in its water wells. For this reason, an Arsenic Mitigation Study will be conducted for the City. This report will determine the need for arsenic mitigation measures in the City's water wells, establish treatment and non-treatment alternatives, and recommend improvements that will bring the City's water into compliance with the arsenic MCL established by the Unite States Environmental Protection Agency (EPA). Upon completion of the Arsenic Mitigation Study, the City will complete the necessary improvements as established in the study. The proposed improvements are not anticipated to affect the City's ability to meet the future water demands.

WASTEWATER AND SEWER SERVICE

The City of Delano collects and transmits all domestic and industrial wastewater to the City's wastewater treatment plant (WWTP) located west of the City on Lytle Avenue between Garces Highway and Cecil Avenue. The plant also accepts the influent from North Kern State Prison, which funded a 0.8 mgd expansion to the treatment plant in the early 1990s. The current treatment plant, which provides primary and secondary treatment of wastewater, has a capacity of 4.4 mgd and receives 4.5 mgd from both the City of Delano and North Kern State Prison. The City of Delano generates and treats 114 gallons per capita per day of wastewater.

The City of Delano is currently working on an expansion of the WWTP in order to meet the long-term goals identified in the recent update to the *City of Delano General Plan* that was adopted in December 2005. The WWTP expansion project is currently in the design phase and is expected to expand the capacity of the WWTP from 4.4 mgd to 8.8 mgd within the existing footprint of the WWTP. The *City of Delano General Plan EIR* assumed that approximately 7.2 mgd would be needed to accommodate the expected population growth to the year 2020. However, when more detailed analysis was conducted, it was determined that the capacity needed to support the anticipated population growth would be 8.8 mgd. As part of the WWTP expansion, the City of Delano would construct facilities to transport the additional effluent to 480 acres of farmland located approximately 1.5 miles southwest of the WWTP. This would include an additional effluent pump, pipeline to travel to the project site, and a 30-acre percolation pond that would be constructed on

the project site. The effluent pipeline would be located to the north and south of Garces Highway beginning at Lytle Avenue, running to the south along Benner Avenue, and ending in the 480-acre effluent disposal lot and the 30-acre percolation pond. A new trunk sewer pipeline would be connected to the existing sewers at the intersection of Hiett Avenue and Garces Highway to the west. The pipeline runs to the south, turns east across agricultural land to Lexington Street, where it runs to the north. The pipeline turns to the east at the north end of the airport and heads north along Mast Avenue/Randolph Street and north along Browning Avenue where it would connect to existing sewer lines. The upgrade of the WWTP will include oxidation ditches, a 65-foot in diameter secondary clarifier, and a 90 inch in diameter secondary clarifier.

Sanitary sewer service is currently provided to the project site through an existing 18-inch sanitary sewer line that runs along Woollomes Avenue.

SOLID WASTE SERVICES

The City of Delano provides municipal waste collection services. The City utilizes the Shafter-Wasco Sanitary Landfill located approximately twenty miles southwest of Delano. This 135-acre landfill provides solid waste disposal services to areas of unincorporated Kern County as well as the cities of Delano, Shafter, Wasco and other nearby municipalities. In 2000, the City of Delano contributed approximately 31,177 tons of solid waste to this facility. The facility is anticipated to have an estimated closure date of 2028. The City provides commercial on-site recycled material and greenwaste pickup.

ELECTRIC, NATURAL GAS, TELEPHONE AND CABLE SERVICE

Southern California Edison provides electrical service, The Gas Company of Southern California provides natural gas service, SBC Communications provides residential and commercial telephone service, and cable television is provided by Time-Warner Cable. Distribution lines for these utilities would need to be extended and/or improved to meet providers' standards.

3.13.2 REGULATORY SETTING

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 the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties are required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995 and 50 percent by January 1, 2000.

The Act further requires every city and county to prepare two documents to demonstrate how the mandated rates of diversion will be achieved. The first document is the Source Reduction and Recycling Element (SRRE) describing the chief source of the jurisdiction's waste, the existing diversion programs, and the current rates of waste diversion and new or expanded diversion programs intended to implement the Act's mandate. The second document is the Household Hazardous Waste (HHW) Element, which describes what each jurisdiction must do to ensure that household hazardous wastes are not mixed with regular non-hazardous solid waste and deposited at a landfill.

CITY OF DELANO GENERAL PLAN AND ORDINANCES

Construction and maintenance of public services and utilities in the City of Delano is enabled and regulated by the *Delano General Plan* (2005) and Municipal Ordinances. The following policies from the General Plan are relevant regarding consideration of improvements to utilities and other services:

Objective A Ensure that new development pays its own way, including both needed facilities and incremental demands on existing facilities.

Public Facility Element Policies

Policy 5 Require the extension and construction of infrastructure to proposed developments according to adopted elements and master plans. The City shall use reimbursement agreements or other financing techniques to reimburse developments for any oversizing cost, which may be required.

Policy 9 Development fee credit may be given for public improvements made by a builder but shall not exceed the amount of fees.

Policy 10 Developers shall construct all tributary facilities necessary to connect to major facilities, whether or not the major facilities have yet been constructed.

Policy 15 New development shall demonstrate that adequate sewerage capacity exists prior to development or that conditions of project approval will insure that sewerage capacity will be created as part of the project prior to the issuance of building permits. Conditions may include installation of necessary facilities or other methods acceptable to the City.

Policy 18 The City shall require the connection of existing and new businesses, residents and industries to the City's water and sewer system. The City

shall establish fees, which enable it to recover the costs of such connection.

Policy 19 A finding shall be made by the Public Works Department to document that an adequate supply of potable water can be provided to serve the domestic and fire suppression needs of each proposed development prior to approval by the City Council.

Policy 20 Conditions of approval shall be implemented with each development to assure that the necessary water production, distribution and/or treatment facility is in place prior to issuance of a building permit.

Policy 23 A finding shall be made by the Public Works Department to document that sewer collection and wastewater treatment can be provided to serve each proposed development prior to approval by the City Council.

Policy 24 Conditions of approval shall be implemented with each development to assure that the necessary sewer collection facility is in place and/or wastewater treatment plant capacity is available prior to issuance of a building permit.

3.13.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on CEQA Guidelines and previous standards used by the City of Delano. For the purposes of this EIR, impacts are considered significant if the following could result from implementation of the proposed project:

1) A substantial increase in demand for an adequate water supply over the existing condition;

2) An inability to provide an adequate water supply, including facilities for treatment, storage and distribution;

3) Require the construction of new water or wastewater treatment facilities;

4) Substantial increases in demand necessitating new or extended electric, natural gas, telephone or cable services in excess of the ability to provide service, in a manner that would create physical environmental effects;

6) Create a demand for solid waste services and generate solid waste in an amount greater than the ability of landfill facilities to accommodate such waste; and/or

7) Contributes significantly to any cumulative public service or utility impact.

METHODOLOGY

The analysis of potential utilities and service system impacts is based upon information contained in the *City of Delano General Plan* (2005) and *Development Cost and Fee Study* (2004), other technical documents provided by the City of Delano and information supplied by local service providers.

PROJECT IMPACTS AND MITIGATION MEASURES

Water Demand and Delivery

Impact 3.13-1 The proposed project will increase the demand for potable water and require extension of the existing potable water delivery system located in Woollomes Avenue to the project site. However, the project site is included in the water service area estimates in the *City of Delano Urban Water Management Plan* (2006); existing infrastructure can adequately supply the proposed project; and the increase in demand would not result in a substantial increase in demand for water supply and delivery over existing conditions. This is considered a **less than significant** impact.

The project site is included in the water service area estimates in the *City of Delano Urban Water Management Plan*. The proposed project would result in an increased demand for potable water to serve the the proposed project. Current municipal capacity is approximately 21.0 million gallons a day (mgd). The City's current maximum daily demand is approximately 13.0 million gallons per day (mgd). Subtracting current maximum demand (13.0 mgd) from production capacity (21 mgd) results in a gross surplus of 8.0 mgd or 9,125 acre-feet per year. In addition, the City currently maintains five storage reservoirs within the distribution system for a total capacity of 10.6 million gallons and a total boosting capacity of 8,950 gallons per minute (gpm). Furthermore, the City is currently in the design stage for construction of an additional well, which will be located on the northwest corner of the Bowman Avenue/Garces Highway intersection, which would have an approximate capacity of 1,200 gpm.

Assuming a commercial water usage rate of 1,200 gallons per acre, the proposed project would require approximately 54,000 gallons per day or 0.054 mgd upon buildout of the proposed project, which would result in a remaining gross surplus of 7.95 mgd of water over the existing conditions. As demonstrated in **Table 3.13-2**, **Estimated Water Demand**

the existing water system has sufficient capacity to provide water to the proposed project on both average and peak water usage days. Water required for fire suppression would come from storage.

TABLE 3.13-2
ESTIMATED WATER DEMAND

	Firm Capacity (Total excluding reserve)
Current Daily Capacity	21.0 mgd
	Maximum Daily Demand
Current Demand	13.0 mgd
Current Demand plus Project	13.05 mgd

Source: City of Delano Urban Water Management Plan, 2006

Water service would be provided to the project site through an existing 12-inch water line along Woollomes Avenue; additional water service infrastructure improvements will be constructed on-site by the project applicant in conformance with City standards. In addition, water supply, treatment and storage impact fees will be assessed to cover the cost of infrastructure improvements necessary to serve the project site. Ordinance No. 928 amended the City of Delano Municipal Code to allow impact fees to be established by resolution. Resolution No. 2004-97 adopted the current impact fee structure, which includes water facilities fees of $5,597 per gross development acre for commercial uses. The existing water system has sufficient capacity to provide water to the proposed project and the necessary infrastructure exists to serve the project site; therefore, the impact is considered **less than significant**.

Construction of the proposed project would result in a significant increase in impervious surface and loss of groundwater recharge on-site. However, the average water level in the Kern County Sub-basin remained essentially unchanged from 1970 to 2000. The proposed project would not substantially deplete groundwater supplies or interfere with groundwater recharge to an extent that would result in a lowering of the local groundwater table; therefore, the impact is considered **less than significant**.

Wastewater Collection and Treatment

Impact 3.13-2 The proposed project will result in an increase in demand for sewer capacity at the City's wastewater treatment plant by 0.045 mgd and requires extension of the existing wastewater system. This is considered a **less than significant** impact.

The *Development Cost and Fee Study* prepared for the City of Delano in 2004 indicates that commercial wastewater flows per gross acre are estimated at approximately 1,000

gallons per day (gpd). The proposed project will therefore generate approximately 45,000 gpd of wastewater at buildout. The current treatment plant, which provides primary and secondary treatment of wastewater, has an existing capacity of 4.4 mgd and receives 3.9 mgd from both the City of Delano and North Kern State Prison. The City of Delano generates 114 gallons per capita per day of wastewater to be treated.

The City of Delano is currently working on an expansion of the WWTP in order to meet the long-term goals identified in the recent update to the *City of Delano General Plan* that was adopted in December 2005. The WWTP expansion project is currently in the design phase and is expected to expand the capacity of the WWTP from 4.4 mgd to 8.8 mgd within the existing footprint of the WWTP. The *City of Delano General Plan EIR* assumed that approximately 7.2 mgd would be needed to accommodate the expected population growth to the year 2020. However, when more detailed analysis was conducted, it was determined that the capacity needed to support the anticipated population growth would be 8.8 mgd. As part of the WWTP expansion, the City of Delano would construct facilities to transport the additional effluent to 480 acres of farmland located approximately 1.5 miles southwest of the WWTP. This would include an additional effluent pump, pipeline to travel to the project site, and a 30-acre percolation pond that would be constructed on the project site. The effluent pipeline would be located to the north and south of Garces Highway beginning at Lytle Avenue, running to the south along Benner Avenue, and ending in the 480-acre effluent disposal lot and the 30-acre percolation pond. A new trunk sewer pipeline would be connected to the existing sewers at the intersection of Hiett Avenue and Garces Highway to the west. The pipeline runs to the south, turns east across agricultural land to Lexington Street, where it runs to the north. The pipeline turns to the east at the north end of the airport and heads north along Mast Avenue/Randolph Street and north along Browning Avenue where it would connect to existing sewer lines. The upgrade of the WWTP will include oxidation ditches, a 65-foot in diameter secondary clarifier, and a 90 inch in diameter secondary clarifier.

The proposed project would produce an average flow of 0.045 mgd, an amount equal to about one percent of existing flows and is within the capacity of the WWTP. Sanitary sewer service to the project site would be provided through an existing 18-inch sanitary sewer line that runs along Woollomes Avenue; additional wastewater infrastructure improvements will be constructed on-site by the project applicant in conformance with City standards. In addition, sewer impact fees will be assessed to cover the cost of infrastructure improvements necessary to serve the proposed project. Ordinance No. 928 amended the City of Delano Municipal Code to allow impact fees to be established by resolution. Resolution No. 2004-97 adopted the current impact fee structure, which includes wastewater collection and treatment/disposal fees of $11,883 per gross development acre for commercial uses. Implementation of the proposed project would not result in a substantial increase in wastewater flows; the WWTP has the capacity to serve the

proposed project; and the necessary infrastructure exists to serve the proposed project; therefore, the impact is considered **less than significant**.

Solid Waste Services

Impact 3.13-3 The proposed project will generate approximately 6,107 pounds/day of solid waste. This is considered a **less than significant** impact.

To estimate the generation of solid waste associated with the proposed project, solid waste generation was calculated using solid waste generation rates for the City of Los Angeles CEQA Thresholds Guide (1998), as listed on the California Integrated Waste Management Board website. The City of Delano utilizes the Shafter-Wasco Sanitary Landfill located approximately twenty miles southwest of Delano. This 135-acre landfill provides solid waste disposal services to areas of unincorporated Kern County as well as the cities of Delano, Shafter, Wasco, and other nearby municipalities. The facility has an estimated closure date of 2028, with planned expansion prior to that date. According to the California Integrated Waste Management Board, as of 2000, the remaining estimated capacity of the landfill was 7,901,339 cubic yards, which is approximately 68 percent of the total estimated permitted capacity. Assuming a solid waste generation rate of 10.53 pounds per employee/day and around 580 total full-time employees working at the project site, the proposed project would generate approximately 6,107 pounds/day of solid waste, which is the equivalent of 1,115 tons/year. This represents an increase of 3.6 percent over existing solid waste levels generated by the City of Delano. The Shafter-Wasco Sanitary Landfill has sufficient capacity to accommodate the waste disposal needs of the proposed project. Therefore, this impact is considered **less than significant**.

Electric, Natural Gas, Telephone and Cable Services

Impact 3.13-4 The proposed project will increase demand for electric, natural gas, telephone and cable services. This impact is considered **less than significant**.

Local providers of utilities in the project area include Southern California Edison, The Gas Company of Southern California, SBC Communications, and Time-Warner Cable. The project will require extension of these services to the project site sufficient to meet providers' needs. As standard practice, gas, electricity, and telephone service providers review development applications to identify the necessary utility easements for the adequate provision of services. The project applicant will be required to install municipal utility improvements and infrastructure to the project site as necessary. Because the site is contiguous to existing services provided in Delano, provision of new services is not expected to be problematic. Therefore, the impact is considered **less than significant**.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact 3.13-5 The proposed project, in addition to reasonably foreseeable projects in the vicinity, would likely result in the need for new or upgraded infrastructure for the delivery of water, sewer services, telecommunications, electricity and natural gas to the project area. This is considered a **less than significant** impact.

Ultimate development of the project site would contribute to cumulative impacts to the City's utility infrastructure when combined with other growth and development in the vicinity. However, future development would also be required to provide infrastructure improvements to meet additional demand generated by those projects, subject to review and approval by the City of Delano. In addition, the proposed project will be required to pay water and sewer impact fees to cover its share of the cumulative impact upon municipal utilities systems. Cumulative impacts to telecommunications, natural gas and electricity can be expected to be less than significant as this applicant and other significant projects are required to provide "will-serve" letters prior to final map recordation and/or issuance of building permits. Therefore, cumulative impacts to utilities would be considered **less than significant**.

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4.0 Alternatives to the Project

4.1 GENERAL CEQA REQUIREMENTS

CEQA requires that a reasonable range of alternatives to the proposed project be described and considered within an EIR. The alternatives considered should represent scenarios that could feasibly attain most of the basic objectives of the project, but will avoid or substantially lessen any of the significant environmental effects. The purpose of this process is to provide decision makers and the public with a discussion of viable development options and to document that other options to the proposal were considered within the application process (CEQA Guidelines, §15126.6).

CEQA requires that the lead agency adopt mitigation measures or alternatives, where feasible, to substantially lessen or avoid significant environmental impacts that would otherwise occur. Where a lead agency has determined that even after the adoption of all feasible mitigation measures, a project as proposed will still cause significant environmental effects that cannot be substantially lessened or avoided, the agency, prior to approving the project as mitigated, must first determine whether, with respect to such impacts, there remain any project alternatives that are both environmentally superior and feasible within the meaning of CEQA.

CEQA provides the following guidelines for discussing project alternatives:

- An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation (§15126.6(a)).
- An EIR is not required to consider alternatives which are infeasible (§15126.6(a)).
- The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project (§15126.6(b)).
- The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects (§15126.6(c)).
- The EIR should briefly describe the rationale for selecting the alternatives to be discussed (§15126.6(c)).
- The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis and comparison with the proposed project (§15126.6(d)).

4.2 RELATIONSHIP TO PROJECT OBJECTIVES

The following is a summary of the principal objectives of the Delano Marketplace project based on information provided by the project applicant. The objectives provide an important benchmark in conducting the comparative alternatives analysis and the feasibility of each alternative. As discussed previously, an alternative is only meaningful for consideration if it can meet the basic objectives of the project as proposed.

- To provide a retail development that meets the current unmet demand for goods and services from consumers residing in the trade area for the City of Delano and from future residential developments;
- To provide a commercial retail shopping center that serves both the local and regional market area to attract new customers and retailers into the City of Delano;
- To provide a commercial development that results in a net fiscal benefit to the City of Delano by generating new sales tax revenue from Delano residents as well as non-residents attracted to the shopping center and by increasing property tax revenues;
- To provide a commercial development that can capture existing "pass-by" trips on State Route 99, bringing new revenue to the City of Delano;
- To provide goods and services at a local site, thereby reducing the number of trips currently being made to shop for these same goods and services at other neighboring cities;
- To provide a commercial retail shopping center on a large, undeveloped lot in close proximity to an existing highway, near other commercial services and residential areas in order to minimize travel lengths and utilize existing infrastructure to the extent possible;
- To provide a commercial center of at least 40 net acres to provide sufficient development area to allow a mixture of uses to create a destination commercial center that will attract various types of customers to the City;
- To create an atmosphere of fun and relaxation for customers in addition to a shopping experience;
- To provide a commercial development that can be adequately served by public services and utilities in a feasible manner;
- To substantially reduce sales dollar leakage out of the City of Delano;

- To provide a commercial development that creates new jobs for City residents; and
- To complete the development of a large-scale retail shopping center on the subject property in a manner substantially consistent with the goals and policies of the City's General Plan Designation as "Community Retail Commercial".

4.3 ALTERNATIVES CONSIDERED BUT REJECTED

ALTERNATIVE SITE LOCATION

An alternative site located at Pond Road and State Route 99 was considered, but rejected from further analysis due to its size and physical constraints. This alternative site location currently consists of farmland divided among various property owners with a range of parcel sizes. Although the location would provide adequate access and visibility from State Route 99 for a regional shopping center, a potential project site would need to be assembled from multiple property owners. In addition, infrastructure necessary to serve the proposed project would need to be extended to the project site. Finally, this location is currently outside the Delano city limits and would require annexation into the city prior to development. Given these constraints, this alternative site location was eliminated from further consideration by the City.

SIGNIFICANT REDUCTION IN SQUARE FOOTAGE AND 250 ROOM HOTEL

In order to reduce the project's significant long-term air quality impacts, as well as significant cumulative impacts to air quality, noise and traffic, an alternative was considered by the City, which included 10,000 square feet of commercial uses, a gas station, and a 250-room hotel. This alternative would result in 4,831 trips per day to the project site and would subsequently result in long-term operational air quality emissions of Reactive Organic Gases (ROG) of approximately 6.53 tons per year and Nitrogen Oxides (NO_x) of approximately 9.85 tons/year, which would be within the SJVAPCD's thresholds of 10 tons/year for both ROG and NO_x. This proposed alternative would also result in a significant decrease in the project's contribution to cumulative traffic noise due to the decrease in the amount of vehicle trips from 22,294 to approximately 4,831 trips per day, which would have reduced the cumulative traffic noise levels.

Although this proposed alternative would be within the SJVAPCD thresholds and would eliminate the proposed project's significant air quality impacts, the City eliminated this alternative from further consideration since it would not meet the project objectives or the City's objectives of development of a large-scale retail shopping center on the subject property in a manner substantially consistent with the goals and policies of the City's General Plan Designation as "Community Retail Commercial" within the City's Redevelopment area.

4.4 PROJECT ALTERNATIVES

As identified within various sections of this RDEIR, the proposed project would result in environmental impacts, including significant impacts to air quality and significant cumulative impacts to air quality, noise, and traffic. All other impacts identified in the RDEIR can be mitigated to a less than significant level with the adoption of mitigation measures as specified within this RDEIR. Notwithstanding, the following discussion identifies and examines a range of alternatives to the proposed project:

- **Alternative 1 – No Project/No Development Alternative**
- **Alternative 2 – Reduced Density Alternative**

Environmental impacts associated with each of the two alternatives are compared with impacts resulting from the proposed project. The impact level of the alternative as compared to the project (less, similar or greater) is noted in parentheses at the beginning of each comparison. **Table 4-1, Comparison of Project Alternatives to the Proposed Project** at the conclusion of this section provides a summary. This section also includes identification of the "environmentally superior" alternative.

ALTERNATIVES ANALYSIS

Alternative 1 – No Project / No Development

CEQA Guidelines Section 15126.6(e)(3) requires that a "No Project" alternative be evaluated as part of an EIR, proceeding along one of two lines: the project site remaining in its existing state or development of the project site under existing underlying land use designations. The "No Project" alternative considered herein considers the comparative environmental effects of not approving the proposed project, with the site remaining in its current condition.

Comparative Analysis

4.1 ***Aesthetics and Visual Resources (less):*** No potential impacts to visual resources would result under this alternative. The existing rural residential and limited commercial character of the proposed project site would continue under a "No Project/No Development Alternative" scenario. Therefore, this alternative would result in less impacts than the proposed project.

4.2 ***Agricultural Resources (less):*** The existing fallow agricultural land would remain undeveloped under this scenario, resulting in less impacts to agricultural resources than the proposed project.

4.3 ***Air Quality (less):*** Significant and unavoidable impacts due to long-term regional pollutants would not occur under this scenario. Therefore, the "No Project/No Development Alternative" would result in less air quality impacts than the proposed project.

4.4 ***Biological Resources (less):*** Potentially significant impacts to various special status wildlife species would be less under this scenario as the site would not be subject to site disturbance or construction/demolition activities. Although all biological impacts have been reduced to a less than significant level through the application of mitigation measures, under the "No Project/No Development Alternative," no potential impacts would occur and no mitigation would be required.

4.5 ***Cultural Resources (less):*** The potentially significant impacts to cultural or archaeological resources resulting from construction activities at the project site would not occur under this alternative, as on-site conditions would remain unchanged. Therefore, this alternative would result in less impact to cultural resources than the proposed project.

4.6 ***Geology and Soils (less):*** The potentially significant impacts relating to ground shaking, liquefaction, and earthquake-induced settlement would still apply to the existing structures found on-site under this alternative. However, far fewer persons would be expected to access the site when compared to development of the proposed project; therefore, exposure of persons to seismic events would be significantly reduced under this alternative. Therefore, the "No Project/No Development Alternative" scenario would result in less impact than the proposed project.

4.7 ***Hazards and Hazardous Materials (similar):*** Potential hazards on the project site associated with possible septic and water irrigation systems impacts would remain under this scenario. Therefore, this alternative would result in similar impacts from hazards and hazardous materials when compared to the proposed project.

4.8 ***Surface Water Hydrology and Water Quality (less):*** The potentially significant surface runoff and water quality impacts due to construction activities and post-development non-point source pollution would not occur under this scenario. Therefore, this alternative would result in less impact than the proposed project with respect to surface water hydrology and water quality.

4.9 ***Land Use Planning (greater):*** The "No Project/No Development Alternative" does not meet the objectives of the *City of Delano General Plan* due to inconsistent residential land uses existing on land designated for commercial use. In addition, the "No Project/No Development Alternative" would not meet the City's economic objectives in the Economic Development Element of the *City of Delano General*

Plan of "the promotion and facilitation of economic diversification to encourage the creation of employment opportunities, increase revenue through the local economy and decrease dependency upon any one sector of the economy." Therefore, the proposed project would result in a greater range of impacts related to land use consistency with the *City of Delano General Plan*.

4.10 ***Noise (less):*** The short-term impacts of noise generated by construction activities and the long-term increase of traffic noise generated by the proposed development and increased vehicular traffic accessing the site would not occur under this alternative. Therefore, this alternative would result in less impact from noise than the proposed project.

4.11 ***Public Services and Facilities (less):*** The potential impacts to law enforcement, fire protection and other public services would not occur under a "No Project/No Development Alternative" as the demand for such services would not increase. Therefore, this alternative would result in less impacts than the proposed project.

4.12 ***Traffic and Circulation (less):*** The potentially significant impacts of increased traffic within the vicinity of the project site would not occur under this alternative. Fewer daily vehicle trips would decrease project impacts on adjacent streets and intersections and would also eliminate incremental noise and air quality impacts associated with daily operation of the proposed project. Therefore, the "No Development Alternative" would result in less impact than the proposed project.

4.13 ***Utilities and Services (less):*** The potential impacts to water and sewer services, solid waste collection, and other utilities would not occur under a "No Development Alternative" as there would be no increased demand for these services. Therefore, this scenario would result in less impacts than the proposed project.

Alternative 2 – Reduced Density Alternative

The Reduced Density Alternative assumes a reduction in the overall project size to approximately 265,000 square feet. A reduced commercial development would generate less vehicle trips to the project site, and subsequently result in a reduction in air quality emissions and reduced noise levels, in comparison to the proposed project. A reduced density alternative of this nature would be large enough to include a density similar to the following configurations: 1) Anchor Store #1 (Wal-Mart Supercenter), gas station, and approximately 37,000 square feet of addition retail, or 2) Anchor Store #2 (Home Improvement Superstore), gas station, and 92,537 square feet of retail space. For the purpose of environmental review under CEQA, this alternative assumes a reduced density configuration of Anchor Store #2 (Home Improvement Superstore), gas station, and 92,537 square feet of retail space since this land use configuration would result in 11,473 trips per

day, which would be approximately 50 percent less than the proposed project. A substantial reduction in the number of vehicle trips per day would result in a subsequent reduction in the air quality emissions and incremental increases in noise levels associated with the proposed project. This alternative assumes that the remainder of the project site would be landscaped.

Comparative Analysis

4.1 ***Aesthetics and Visual Resources (similar):*** Although this alternative would involve a reduction in the number and/or size of proposed buildings and parking areas, the overall aesthetic/visual affect associated with construction of a regional shopping center would not be substantially different from that of the proposed project. Therefore, no substantial difference between the proposed project and the reduced project size alternative would be expected with respect to aesthetics and visual resources.

4.2 ***Agricultural Resources (similar):*** This alternative would still result in the conversion of fallow agricultural land, rural residential uses, and limited commercial uses to urban uses. Therefore, this alternative would result in a similar impact to the proposed project regarding agricultural resources.

4.4 ***Air Quality (less):*** The "Reduced Density Alternative" would result in operational emissions of approximately 14.74 tons/year of ROG and 22.35 tons/year of NO_x. This would represent a reduction in the amount of regional emissions in comparison to the proposed project, which is anticipated to result in emissions of approximately 32.75 tons/year of ROG and 50.20 tons/year of NO_x. However, the resulting emissions associated with a reduced density alternative of this nature would still exceed the air quality thresholds established by the San Joaquin Valley Air Pollution Control District of 10 tons/year of ROG and NO_x. As such, this alternative would reduce emisisons, but not avoid the significant and unavoidable regional air quality impacts associated with the proposed project.

4.5 ***Biological Resources (similar):*** The "Reduced Density Alternative" would result in a similar conversion of acreage to urban uses. Therefore, this scenario would result in a similar impact to biological resources as the proposed project.

4.6 ***Cultural Resources: (similar):*** Since there are no known cultural or archaeological resources present at the project site, this alternative would result in similar impacts to the proposed project with respect to cultural resources. If previously unknown resources are discovered at the project site, contingent mitigation measures would be applied that would reduce the potentially significant effects to a less than significant level for both the proposed project and the "Reduced Density Alternative." As such,

this alternative would result in no substantial difference to the proposed project with respect to cultural resources.

4.7 ***Geology and Soils (similar):*** Potentially significant impacts caused by ground shaking, liquefaction and earthquake-induced settlement would still apply to proposed structures and people would still be exposed to potential seismic events under this alternative. Therefore, there would be no substantial difference between this alternative and the proposed project with respect to geology and soils impacts.

4.8 ***Hazards and Hazardous Materials (similar):*** Since potential adverse effects associated with possible septic and water irrigation systems would be mitigated to a less than significant level through implementation of appropriate mitigation measures, there would be no impact from hazardous materials associated with either the proposed project or the "Reduced Density Alternative." Therefore, there would be no substantial difference in terms of hazardous materials impacts between the proposed project and this alternative.

4.9 ***Surface Water Hydrology and Water Quality (less):*** Potentially significant surface runoff and water quality impacts due to construction activities and post-development non-point source pollution would be similarly mitigated for both the proposed project and the "Reduced Density Alternative." However, the reduction in impervious surfaces from fewer/smaller buildings and fewer parking spaces would result in a reduced volume of surface runoff. Therefore, this alternative would have less of an impact with respect to hydrology and water quality.

4.10 ***Land Use Planning (greater):*** This alternative would generally include the same range of land uses as the proposed project, but at a smaller scale. The "Reduced Density Alternative" would not be the optimal density at the project site in order to assist the City in meeting it's economic objectives in the Economic Development Element of the *City of Delano General Plan* of "the promotion and facilitation of economic diversification to encourage the creation of employment opportunities, increase revenue through the local economy, and decrease dependency upon any one sector of the economy." Therefore, the proposed project would result in a greater range of impacts related to land use consistency with the *City of Delano General Plan*.

4.11 ***Noise (less):*** The "Reduced Density Alternative" would result in approximately 11,473 trips per day, which would be a 50 percent reduction in the number of vehicle trips to the project site. This would result in a subsequent decrease in the expected noise levels under project and cumulative conditions. Therefore, this alternative would result in less impact from noise than the proposed project.

4.12 ***Public Services and Facilities (similar):*** The potential impacts to law enforcement, fire protection and other public services would not be significant for the proposed project and would not be significant for the "Reduced Density Alternative." Therefore, no substantial difference would result from this alternative with respect to public services.

4.13 ***Traffic and Circulation (less):*** Potentially significant impacts of increased traffic within the vicinity of the project would be mitigated for both the proposed project and the "Reduced Density Alternative" except under cumulative conditions for several roadway segments along Woollomes Avenue. However, because the "Reduced Density Alternative" would result in significant reduction in vehicle trips to the project site, from 22,294 trips generated by the proposed project to 11,473 trips per day, this alternative would subsequently reduce traffic congestion on the surrounding road network and would have less impacts with respect to transportation and circulation especially with respect to the affects to the State Route 99/Woollomes Avenue interchange and the roadway segments along Woollomes Avenue.

4.14 ***Utilities and Services (similar):*** The potential impacts to water and sewer services, solid waste collection and other utilities would not be significant for the proposed project and would not be significant for the "Reduced Density Alternative." Therefore, no substantial difference would result from this alternative with respect to utilities and services.

4.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines Section 15126.6(e)(2) requires that the environmentally superior alternative be identified. If the environmentally superior alternative is the "No Project/No Development Alternative," the EIR shall also identify an environmentally superior alternative among other alternatives. In this case, Alternative #1, the "No Project/No Development Alternative" represents the environmentally superior alternative because most impacts would be reduced relative to the proposed project. However, the "No Project/No Development Alternative" does not meet any of the project objectives and is inconsistent with the *City of Delano General Plan* land use and zoning maps that designate the project site for commercial use. Therefore, Alternative #2, the "Reduced Density Alternative" would be the environmentally superior alternative and would result in the greatest reduction in environmental impacts as compared to the proposed project. This is due primarily to the reduced impacts related to traffic and the subsequent reduction in noise and air quality impacts that would result. However, this scenario would not meet the project's objectives or the City's objectives to provide a commercial retail shopping center that serves the local and regional market, results in a net fiscal benefit to the City, reduces sales dollar leakage and creates new jobs for the City of Delano, which is currently

experiencing a high unemployment rate. A summary matrix is provided below, which compares each considered alternative with the proposed project.

TABLE 4.1
COMPARISON OF PROJECT ALTERNATIVES TO THE PROPOSED PROJECT

Environmental Category	Alt. 1 No Project/No Development Alternative	Alt. 2 Reduced Density Alternative
Aesthetics	Less	Similar
Agricultural Resources	Less	Similar
Air Quality	Less	Less
Biological Resources	Less	Similar
Cultural Resources	Less	Similar
Geology and Soils	Less	Similar
Hazards	Similar	Similar
Surface Water Hydrology & Water Quality	Less	Less
Land Use Planning	Greater	Greater
Noise	Less	Less
Public Services & Facilities	Less	Similar
Traffic & Circulation	Less	Less
Utilities & Services	Less	Similar
Consistency with Project Objectives	Inconsistent	Less Consistent

5.0 Cumulative Impacts Summary

This section of the RDEIR identifies the cumulative impacts associated with the proposed Delano Marketplace project as statutorily required by CEQA. Cumulative impacts expected from the proposed project are the result of combining the potential effects of the project with other cumulative development anticipated by growth within the *City of Delano General Plan*. The following discussion considers the impacts of the relevant environmental areas. This information is taken from the various analyses within **Section 3.0** of this EIR.

5.1 ANALYSIS REQUIREMENT

CEQA GUIDELINES

CEQA requires that an EIR contain an assessment of the cumulative impacts that could be associated with the proposed project. According to CEQA Guidelines Section 15130(a), "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in relation with the effects of past projects, the effects of other current projects and the effects of probable future projects. As defined in CEQA Guidelines Section 15355, cumulative impacts refer to two or more individual effects which, when considered together, are substantial or which compound or increase other environmental impacts. A cumulative impact occurs from:

> *…the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.*

In addition, Section 15130(b) identifies the following three elements that are necessary for an adequate cumulative analysis:

(1) Either:

(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or

(B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

(2) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available, and

(3) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable. CEQA Guidelines Section 15130(a) also states the following with regard to cumulative impacts that are not significant:

- An EIR is not required to discuss impacts that do not result in part from the project evaluated in the EIR (Section 15130(a)(1)).
- When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR (Section 15130(a)(2)).
- An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact (Section 15130(a)(3)).

CEQA Guidelines (Section 15130(b)(1)) requires the use of one method of cumulative analysis from two choices offered: a list of known past, present and probable future projects in the area or a summary of projections contained in adopted municipal plans and planning documents. For the purposes of cumulative impact analysis for this EIR, the list method is used. Relative to this method, CEQA Guidelines state the following:

1. *When utilizing a list…factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type. Location may be important, for example, when water quality impacts are at issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example, when the impact is specialized, such as a particular air pollutant or mode of traffic.*

2. *Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used. (Section 15130(b)(1)(2, 3).*

5.2 CUMULATIVE IMPACT ANALYSIS AND ASSUMPTIONS

Based on project conditions, assessment of the project's contribution to cumulative impacts were discussed for each of the topic areas in **Section 3.0 Environmental Setting, Impacts and Mitigation Measures**. Using the "list" method identified above, the impacts associated with that growth were projected. Cumulative area projects evaluated, in addition to the proposed project, are listed in **Table 5-1**. This list was compiled in consultation with City staff.

For each section, the discussion of cumulative impacts of these projects follows direct project impacts and mitigation measures. Throughout the cumulative analysis presented in this EIR, the appropriate cumulative context is described and considered in light of the types of impacts created by the project. The cumulative impacts summarized below are also presented in each of the Environmental Analysis Subsections of the EIR (see **Sections 3.1 through 3.13**). Each cumulative impact is determined to have one of the following levels of significance: **less than significant**, **potentially significant**, or **significant and unavoidable**, thus requiring a Statement of Overriding Considerations.

TABLE 5-1
CUMULATIVE PROJECTS IN THE CITY OF DELANO

#	Project Title	Description	Status
APPROVED PROJECTS			
1	Bakersfield College Satellite Campus by Kern Community College District (KCCD) on 50 acres	Annexation No. 41 was completed mid-2005. Land was purchased by KCCD and the site plan has been approved by the State Architect and Department of Toxic Substances Control (DTSC). The Science and Math Classroom Facilities component have now been completed. Bakersfield College opened the Delano Satellite Campus for classes in fall 2005.	Future phases are pending construction.
2	Delano Union Education Complex: Delano Union Elementary School District (DUESD) on 35 acres	The project site was acquired in 2002 and is being developed in three phases. Harvest Elementary School was completed in 2004, while La Viña Middle School was completed in 2006. The third phase is the construction of the new DUESD Administration Complex.	Construction for the third and final phase is slated for 2009.
3	Annexation No. 38 (Part 2): Delano Union Elementary School District (DUESD) on 28 acres	Annexation was approved for the elementary school site (Site No. 2A) by the City Council in May 2004. LAFCO approval was also received in May 2004. Land was purchased by the DUESD from Workman Brothers Development in October 2004. The site has received final approval from the State Department of Education and Department of Toxic Substances Control (DTSC).	Expected construction date for the education facility is set for Spring 2007.
4	Annexation No. 41 (Part 2): Delano Joint Union High School	Annexation No. 41 was completed in mid-2005. Land was purchased by DJUHSD, and is the third high school site. School completion is targeted for fall 2008.	Construction is currently in progress.

#	Project Title	Description	Status
	District (DJUHSD) on 45 acres		
5	Annexation No. 33: Delano Municipal Sewer Farm Facility on 485 acres	Annexation was approved by the City Council and LAFCO approval was received in June 2004. The purpose of the facility is to accommodate planned expansion of the wastewater treatment plant. The City is working on the design phase of the proposed project.	CEQA review for the proposed project is complete and has been certified by the City Council. Construction of the facility is expected to be initiated in 2007.
6	Belmont Meadows Apartments by AMG on 4 acres	The conditional use permit for the project with a density bonus of 70 multi-family residential units was approved by the City Council in February 2005. The project is partially funded by the California Tax Credit Allocation fund.	Construction is currently in progress.
7	Annexation No. 38 (Part 1): Tract 6224 by Centex Homes on 52 acres	The project is the construction of 232 single family residential lots. Annexation was approved by City Council and final LAFCO approval was obtained in May 2004.	The City approved the Tentative tract Map 6224 in 2004. The developer has recorded two phases of the final map.
8	Annexation No. 28: Vesting Tract 6225 (Wild Oak) by Centex Homes on 61.02 acres	The project is to construct 244 single family lots and an 8-acre park site in the R-1 zone district on property located north of 20th Avenue, 0.25 miles east of Browning Avenue and 660 feet south of County Line Road.	Development on two phases has been completed; the third phase is under construction with 40 percent complete. The remaining two phases are awaiting construction.
9	Annexation No. 39: Tract 6235 by Ennis Homes on 80 acres	The project is to construct 267 single family residential lots. Annexation was approved by the City Council and LAFCO approval was received in September 2004. Tentative tract map 6235 was approved by the City Council in 2004.	Construction is pending.
10	Annexation No. 34: Tract 6326 and Tract 6327 by Maximus III Company on 66 acres	Annexation was approved by the City Council and LAFCO approval was received in July 2004. The project consists of two subdivisions: Tract 6326 for 135 single family lots and Tract 6327 for 126 single family lots. The final maps for both tracts were approved in Spring 2005 with Ennis Homes identified as the developer.	Start of the residential construction is pending.
11	Infill Development	This is a combination of 50 proposed multiple and single family units.	Construction is pending.
12	Maganda Park Subdivision: Tract 5987 by Kern County Housing Authority / Self-Help Enterprises on 10 acres	Construction of the first 20-lot phase of the tract has been completed. All 20 dwelling units have been occupied with new residents as of March 2005. The second phase of 35 dwelling units has been completed and occupied as of October 2006. An additional 14 single family lots are under construction through Self-Help Enterprises.	The project is partially completed.
13	Annexation No. 35: Tract 6176 (Legacy Estates) by Oakfield Development on 80 acres	Annexation was approved by the City Council and LAFCO approval was received in January 2004. Tract 6176 consists of 355 single family residential lots and was approved by the City Council in October 2003. Construction of the first four phases has been completed.	The two remaining phases are awaiting start of construction.
14	Annexation No. 44: Pre-zoning No. 299 (Tentative Tract 6470)	Tentative Tract 6470 consists of 165 single family residential lots and has been approved by the City Council. Annexation approval was received from LAFCO in June 2006.	The improvement plans for the final tract map submittal are

#	Project Title	Description	Status
	on 39.1 acres		under preparation.
15	Sunny View Apartments by Global Premier on 10.2 acres	A two-phase, 140-unit multi-family residential apartment project is proposed east of Dover Street and south of 20th Avenue. The first phase of the project was partially funded by the California Tax Credit Allocation fund.	The first phase was completed and finalized as of April 5, 2007, and the second phase is awaiting construction.
16	Annexation No. 38: Tentative Tract 6550 by Workman Brothers on 37.43 acres	This project proposes construction of 167 single family residential lots, drainage improvements, and a temporary retention basin located north of Garces Highway, west of Timmons Avenue, east of Melcher Road, and south of Matthews Avenue. The tentative tract map was approved by City Council in July 2005.	Construction of the proposed project is pending.
17	Annexation No. 31: Tentative Parcel Map 11519 by Millenium III, LLC on 17.65 acres	This project proposes division of 17.65 acres into 11 commercial/industrial parcels and one landscaping lot in the industrial zone district located west of Garzoli Avenue, one-quarter mile south of Woollomes Avenue. Tentative Parcel Map was approved by the City Council in July 2006.	Improvement plans for the Final Map are under preparation.
18	Delano Vineyard Plaza – Phase I by Pacific Advisors on 8.92 acres	A 104,000 square foot Home Depot store opened in October 2004. A 58,342 square foot commercial/restaurant center is proposed west of the Home Depot site. A Mitigated Negative Declaration was adopted by the City Council in September 2006.	Development of the site is pending.
19	Tentative Parcel Map 11639 by Maximus III Company on 7.38 acres	The project proposes division of 7.38 acres into 4 general commercial lots. Tentative Parcel Map 11639 was approved by the City Council in December 2006. A total of 81,000 square feet of retail space is proposed.	Development of the project is slated to begin in Spring 2007 pending City approval of the Final Parcel Map and Site Plan.
20	Rite Aid Pharmacy on 1.63 Acres	The project is a 17,000 square foot Rite Aid drug store with drive-up pharmacy service located at the northeast corner of Cecil Avenue and Randolph Street	Store was completed and finalized as of March 2007.
21	Walgreens on 1.51 acres	The project proposes construction of a 14,820 square foot Walgreens store with a drive-up pharmacy service at the southwest corner of Cecil Avenue and High Street.	Construction of the proposed project is pending.
22	Home Depot	The 120,496 square foot Home Depot home improvement center is currently in operation.	Currently in operation.
FUTURE PROJECTS			
1	Annexation No. 40: General Plan Amendment 05-03, Pre-zoning Amendment No. 290 on 37.5 acres	Annexation No. 40 includes a proposal to amend the General Plan Land Use Element from low-density residential to a combination low- and medium-density residential and related pre-zoning of property to R-1/R-2.	The project is pending completion of annexation and submittal of a development concept plan from the applicant.
2	Annexation No. 45: General Plan Amendment 05-04, Pre-zoning No. 301 – Tentative Tracts 6727 and 6728 on 160.98 acres	This annexation contains Annexation No. 46. The project proposes 693 single family residential lots and is located east of Villagio single family tracts and includes an amendment to the General Plan Land Use Element from Agricultural/Urban Reserve to Low Density Residential and pre-zoning as R-1. The project was approved by the City Council in September 2006. Annexation was completed as of August 2006.	Tentative Tract Maps have been approved.
3	Tentative Tract 6570 by Florsheim Land Company on 320 acres	Tentative Tract 6570 proposes approximately 1,160 single family residential lots within the western and southwestern portion of Annexation No. 43 and south of Tentative tract 6682. Master parks plan and school site are incorporated into the project. Design	Environmental review of the proposed project is pending.

#	Project Title	Description	Status
		meetings are in progress with City staff.	
4	Annexation No. 47: Tentative Tract 6889 – Villas at the Vintage Park by Reynen & Bardis Communities on 399 acres	Tentative Tract 6889 proposes approximately 1,671 single family residential lots. Application of Annexation No. 47 includes a General Plan Amendment, Zone Amendment, and Tentative Tract 6889. Plans were submitted in May 2006.	The project is under City review pending completion of annexation and a draft EIR.
5	Tentative Tract 6682 by P.S. Taggert Company/New Visions on 76 acres	Tentative Tract 6682 proposes 359 single family residential lots within the northern portion of Annexation No. 43. The project was approved by the City Council in March 2006.	Tentative Tract Maps have been approved.
6	Block H Project: Community Redevelopment Agency of Delano	This City-initiated redevelopment project is a critical component of the City's Downtown Economic Strategic Plan. A design charrette took place in July 2006 to gauge the community's development ideas for the 16 acre site. Two different alternative projects resulted for the RDA's consideration. A master plan is included in the project. The selected project is proposed to be a mixed-use plan consisting of retail, housing, offices, and live-work facilities. A project developer will be chosen in Spring 2007.	Anticipated development is targeted to begin in mid-2008.
7	Annexation No. 36: Delano Marketplace (Phase II) by YK America – Community Retail Commercial and Residential on 80 acres	Plans are being finalized to submit a 55-acre community retail commercial development with two anchor tenants. The project applicant proposes to use the remaining 25 acres for higher-density single family residential lots to support the planned commercial uses. The project proposes approximately 395,186 square feet of commercial space, 141 single family residential units, and 120 apartment units.	No application is in process.
8	Annexation No. 49: Delano Marketplace (Phase III) by YK America on 77 acres	The project applicant proposes community retail commercial uses on 50 acres and residential on 27 acres. Approximately 340,837 square feet of commercial space, 128 single family residential lots, and 168 units of senior housing are proposed.	No application is in process.
9	Central Valley Office Supply on 5 acres	Apple Annie's Avalanche Club (aka Central Valley Office Supply) proposes to develop a 19,005 square foot retail office and wholesale supply facility.	No application has been submitted; land sales contract is pending.
10	Delano Vineyard Plaza – Phase II by Pacific Advisors on 52 acres	A site plan was submitted to City of Delano in December 2004 to initiate development of the community retail commercial area within Annexation No. 34.	Environmental review is pending.
11	General Commercial by Maximus III Company on 65 acres	This project is part of Annexation No. 34, which was approved by the City Council. LAFCO approval was received in July 2004.	No building permits have been issued.
12	Tentative Parcel Map 11605 on 1.71 acres	The project involves a division of 1.71 acres into two commercial parcels located at the northwest corner of Cecil Avenue and Glenwood Street. A proposed retail space of 6,808 square feet for commercial development is to include franchise restaurant chains.	No building permits have been issued.
13	West Side Industrial Park on 145 acres	The City owns a 145 acre site located off of Garces Highway and Lytle Road. Two 5-acre± sites are being sold for the development of two small businesses.	The City Redevelopment Agency has applied for an EDA grant to install all utilities and streets for the five acre site in 2008.

Source: City of Delano Community Development Department. *Approved and Cumulative Projects in the City of Delano.* Updated April 17, 2007.

AESTHETICS AND VISUAL RESOURCES

Cumulative Visual Effect

Impact 3.1-4 The proposed project, combined with other similar projects in the area, may result in a cumulative aesthetic impact to the existing visual character of the project area. This effect is considered a **less than significant impact.**

No significant aesthetic impacts have been identified for the proposed project. The proposed project would extend the continued development of commercial land uses located to the north and east. The proposed project will not have an individual aesthetic impact; the proposed project in combination with other projects in the area will contribute to the cumulative aesthetic impact, but that cumulative change in community character is considered **less than significant**. Standard project and design review procedures as implemented by the City of Delano will provide guidance for any potential projects in order to prevent degradation of the visual character of the area. Therefore, the cumulative visual impact is considered to be **less than significant**. No mitigation is required.

AGRICULTURAL RESOURCES

Cumulative Conversion of Farmland

Impact 3.2-2 The proposed project would convert approximately 45 acres of land designated as "Grazing Land" and "Other Land" in the *Important Farmlands Map of Kern County* to urban uses and would not contribute to the cumulative loss of agricultural land in the region. This considered a **less than significant** cumulative impact**.**

The project site is located within the existing City limits of Delano and has been designated for urban uses by the *Delano General Plan* (City of Delano 2005*)*. The proposed project would result in the conversion of land from fallow agricultural land, rural residential and limited commercial uses to a regional shopping center. The *Important Farmlands Map of Kern County* (DOC 2002) classifies the proposed project site mostly as "Grazing" land and the remainder as "Other Land." In addition, the City of Delano has identified agricultural land in the vicinity of the proposed project for planned urban uses. Adjacent land on the south has been designated as "Light Industrial" by the *City of Delano General Plan*; property to the northwest was recently annexed into the City and designated as "Community Retail Commercial"; and land adjacent on the west is designated for commercial and residential development, pending annexation into the City.

Therefore, the proposed project would not contribute to the conversion of prime agricultural land to urban uses. The proposed project's contribution to the cumulative loss

of agricultural land in the region would be considered **less than significant** cumulative impact.

AIR QUALITY

Cumulative Regional Air Quality Impacts

Impact 3.3-7 Project-generated emissions would contribute, on a cumulative basis, to existing and future regional nonattainment conditions within the SJVAB, as well as an increase in greenhouse gas emissions. This impact is considered **significant**.

The SJVAPCD's approach towards assessing cumulative impacts is based, in part, on the on projected increases in emissions attributable to the proposed project, as well as the project's consistency with the growth projections used for development of air quality attainment plans. In accordance with SJVAPCD-recommended methodology, projects anticipated to have significant and unavoidable impact at the project-level would also be considered to have significant cumulative air quality impacts. In addition, a project would be considered to conflict with or obstruct implementation of the regional air quality plans if it would be inconsistent with the emissions inventories contained in the regional air quality plans. Emission inventories are developed based on projected increases in population growth and vehicle miles traveled (VMT) within the region. Project-generated increases in population or VMT could, therefore, potentially conflict with regional air quality attainment plans.

As noted earlier in this report, implementation of the proposed project would result in significant and unavoidable project-related impacts to regional air quality, as well as increases in regional vehicle-miles traveled. Project-generated emissions would contribute, on a cumulative basis, to existing and future nonattainment conditions within the SJVAB. This impact is, therefore, considered **significant.**

Mitigation measures identified in Impact 3.3-3 would result in reductions in mobile-source pollutants of regional and local concern. With implementation of Mitigation Measure **MM 3.3-3**, the project's contribution to cumulative air quality impacts would be lessened, but not to a less than significant level (i.e., mitigated to levels below the SJVAPCD's recommended significant threshold of 10 tons/year for ROG and 10 tons/year for NO_X) for the extended life of the project. No additional feasible mitigation measures have been identified that would further reduce project-related impacts. Thus, the proposed project's contribution to cumulative regional air quality conditions would be considered **significant and unavoidable**.

In addition to increases in criteria air pollutants, the proposed project would also contribute to increases in greenhouse gas (GHG) emissions that are associated with global

climate change. A large majority of the GHGs attributable to the proposed project would be comprised of carbon dioxide (CO_2) emissions generated by mobile sources. Additional emissions of GHGs would be associated with energy consumption.

The combination of a grocery store with general merchandise in the Wal-Mart Supercenter is anticipated to encourage multi-purpose shopping trips, which is expected to reduce fuel consumption by reducing the number of trips some people might otherwise make between different stores. In addition, the proposed Wal-Mart Supercenter, the largest of the anchor stores within the proposed regional shopping center will be incorporating energy efficient measures into the project design. According to representatives from Wal-Mart, the proposed Wal-Mart Supercenter will be built of nearly 100 percent recycled structural steel. All of the plastic baseboards and much of the plastic shelving would be comprised of 100 percent recycled plastic. The sinks in the restrooms will include sensor-activated low flow toilets. The faucets reduce usage by approximately 84 percent and save approximately 20 percent usage over similar operated systems. Each refrigeration system will include ozone friendly refrigerants. In addition to the energy-saving measures to be incorporated into the proposed project as part of Mitigation Measure 3.3-3, the proposed Wal-Mart Supercenter will incorporate the following energy-related features into the design of the proposed project:

- *Day lighting (skylights/dimming):* The store will include a day lighting system, which automatically and continuously dims all of the lights as the daylight contribution increases.
- *Night Dimming:* The Wal-Mart Supercenter will dim lighting to about 65 percent illumination during the late night/early morning hours.
- *Energy efficient HVAC units:* The Wal-Mart Supercenter will utilize "super" high efficiency packaged HVAC units. While the industry standard EER (Energy Efficiency Ratio) is 9.0, the units that will be utilized at the store are anticipated to be rated at between 10.8 to 13.2. These units range between 4-17 percent more efficient than required by Title 24.
- *Central Energy Management:* The store will be equipped with energy management systems to be monitored and controlled from Wal-Mart's home office in Bentonville, Arkansas. These systems enable Wal-Mart to monitor energy usage and performance at the store 24 hours per day, seven days per week.
- *Water Heating:* The Wal-Mart Supercenter will capture waste heat from the refrigeration equipment to heat water for the kitchen prep areas of the store. This represents energy savings of 165 million British Thermal Unit (BTU's) per year.
- *White Roof:* The Wal-Mart Supercenter will have a "white" membrane roof vs. most retail stores that have a darker color. The high solar reflectivity of this

membrane results in lowering the "cooling" load by about 10 percent. No PVC-roofs will be used.

- *Interior Lighting Retrofit Program:* The Wal-Mart Supercenter will utilize T-8 fluorescent lamps and electronic ballasts. The energy load is reduced by approximately 15-20 percent as a result of this upgrade.
- *LED Signage Illumination:* The Wal-Mart Supercenter will use LED lighting in all of the internally illuminated building signage. The application of LED technology is over 70 percent more energy-efficient than fluorescent illumination. With lamp life ranging to 100,000 hours, using LEDs significantly reduces need to manufacture and dispose of fluorescent lamps.
- *Integrally Cooled Concrete Floors:* The use of concrete floors represents a major reduction of carpet and vinyl tile finishes from new Wal-Mart Supercenter stores. This reduces environmental concerns with the manufacture and disposal of PVC, it also reduces the need for most chemical cleaners, wax, and wax strippers. The flooring area for the grocery component of the proposed project would be comprised of colored concrete floors.

The proposed Wal-Mart Supercenter would also be designed and equipped to recycle oil, tires, auto batteries, cardboard, vegetable oil, single use cameras, bottles and cans, plastic waste, electronic waste, and silver from the processing of photos in the photo processing department. Recycling can substantially reduce emissions associated with the manufacturing of such products. Many of the above measures incorporated as part of the design of the WalMart Supercenter have also been incorporated as mitigation measures for the remaining building components/tenants associated with the proposed project. Implementation of the these measures, along with compliance with the California Building Standards and the 2005 California Energy Commission Energy Efficiency Standards, would help to reduce the project's contribution to global GHGs and climate change. No emission thresholds have been established under federal, state or local laws for evaluation of the significance of increases of GHGs associated with proposed urban development projects.

Cumulative Localized Air Quality Impacts

Impact 3.3-8 Project-generated emissions would contribute, on a cumulative basis, to localized increases in pollutant concentrations. This impact is considered **significant and unavoidable**.

As noted in Impacts 3.3-5 implementation of the proposed project would not be anticipated to contribute to localized concentrations of mobile-source CO under future cumulative conditions. In addition, no major sources of odors were identified in the project vicinity and, given that emissions of odors attributable to the proposed project would be considered less than significant, the project's contribution to cumulative odor impacts would be considered less than significant. However, increased emissions of TACs,

though considered less-than-significant on a project-level, may contribute on a cumulative basis to background concentrations of TACs.

As previously discussed, sensitive land uses located in the vicinity of the project site consist primarily of residential land uses. The nearest residential land use is located approximately 0.3 miles south of the project site, approximately 500 feet west of State Route 99. Additional residential dwellings are also located further south and within approximately 200 feet of State Route 99. These sensitive receptors are of particular concern given their proximity to State Route 99 and increased exposure to diesel-exhaust PM associated with on-road heavy-duty truck traffic on this roadway, which is considered the predominant source of TACs in the project area.

To address diesel-exhaust PM from on-road sources, ARB created the Diesel Advisory Committee, which consists of staff from ARB, EPA, state and local agencies, industry representatives, environmental groups, and concerned members of the public. With the assistance of the Diesel Advisory Committee and its subcommittees, ARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (ARB 2000a) and the *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines* (ARB 2000b). ARB approved these plans on September 28, 2000.

ARB is currently in the process of implementing the control measures identified in the diesel particulate matter program. During this control measure phase, specific statewide regulations designed to further reduce emissions of diesel particulate matter from diesel-fueled engines and vehicles will be evaluated and developed. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce emissions of diesel particulate matter. Although the diesel particulate matter program is ongoing, there are already existing regulations that mandate lower emissions of particulate matter from new on-road diesel-fueled vehicles. These regulations will require substantial reductions in particulate matter and other emissions from on-road heavy duty diesel-fueled engines. Additional and more stringent emissions standards will apply to engines starting in the 2007 model year because of the adoption of federal standards at the state level, resulting in particulate matter emissions of less than 0.01 gram per brake horsepower hour (gm/bhp-hr) for these types of engines. In addition to on-road sources, off-road vehicles are also subject to more stringent regulations intended to reduce emissions of diesel-exhaust PM. ARB is currently working on proposed regulations to include a particulate matter reduction requirement, which would require particulate matter emissions to be less than 0.02 gm/bhp-hr for these types of engines. According to ARB, implementation of diesel-exhaust PM emission-reduction standards will result in overall reductions in associated health risks of approximately 70 percent by 2010 (ARB 2006).

Mitigation measures identified in Impact 3.3-3 would result in reductions in project-related mobile-source pollutants. However, on-road vehicles are regulated by ARB and, as a result, no additional mitigation measures have been identified that would reduce this impact to a less-than-significant level. Although TACs from on-road vehicles are anticipated to continually decrease in future years due to more stringent regulatory requirements, as discussed above, the proposed project's contribution to cumulative local air quality conditions would be considered **significant and unavoidable** for the foreseeable future.

BIOLOGICAL RESOURCES

Cumulative Impacts to Special Status Species, Critical Habitats and Wildlife Movement

Impact 3.4-4 The proposed project, in addition to anticipated cumulative development in the project vicinity, may disturb special status species, critical habitats and wildlife movement throughout the region. These impacts would be considered **potentially significant** cumulative impacts.

As presented in the impact discussions above, implementation of the proposed project would result in a loss of habitat and contribute to biological resource impacts, including disturbance of special status species. Anticipated development and urban expansion of the area is expected to further contribute to these impacts and is considered a potentially significant cumulative impact to biological resources.

Implementation of mitigation measures presented within this chapter, **MM 3.4-1** through **MM 3.4-3**, would reduce the overall contribution to cumulative biological resource impacts resulting from completion of the project by ensuring that the project applicant retain a qualified biologist to complete pre-construction surveys of suitable burrowing owl and San Joaquin kit fox habitat no more than 30-days prior to construction activities at the project site and to conduct focused surveys for active nests of raptors and migratory birds if proposed construction activities are to occur during the nesting season for local avian species. Appropriate performance measures are incorporated within these mitigation measures to ensure that the proposed project would not contribute to the potential loss and/or restriction of biological resources in the region. Therefore, the proposed project would have a **less than significant** cumulative impact to special status species, critical habitats, and wildlife movement.

CULTURAL RESOURCES

Archaeological and Cultural Resources

Impact 3.5-3 Implementation of the proposed project, in combination with cumulative development activity in the region, would increase the potential to

disturb or contribute to the loss of known and undiscovered cultural resources. This is considered a **potentially significant impact.**

Implementation of **Mitigation Measures MM 3.5-1a** and **MM 3.5-1b** would ensure the project's contribution to this cumulative impact remains at a **less than significant** level by addressing impacts on a case by case basis, thus avoiding compounding of cumulative development.

HAZARDS AND HAZARDOUS MATERIALS

Risk of Exposure to Hazardous Waste or Materials

Impact 3.7-6 Implementation of the proposed project in addition to cumulative development associated with buildout of the General Plan may result in cumulative hazardous risk impacts. This is considered a **less than significant** impact.

Implementation of the proposed project would result in potential short-term impacts during construction activities associated with exposure to hazardous substances such as waste oil and hazards due to abandoned septic systems and water wells. However, hazardous materials impacts would be site-specific and are generally not affected by cumulative development in the region. As described in this section, with proper implementation of mitigation measures incorporated herein, the proposed project would not contribute to an increase in the potential for soil or groundwater contamination or the potential risk of upset as a result of current or past land use. The proposed project will not combine with any planned growth in the area to form an impact greater or more significant than the project impact alone. Therefore, the cumulative impact is considered **less than significant**.

SURFACE WATER HYDROLOGY AND WATER QUALITY

Surface Water Runoff and Contamination

Impact 3.8-5 The proposed project in combination with future development in the area may cause a cumulative effect with regard to drainage and water quality. This cumulative impact is considered **less than significant**.

Development of the project site would contribute to cumulative drainage flows and surface water quality impacts when combined with future growth and development in the project vicinity. However, the City of Delano requires that new development mitigate storm drainage impacts through the construction of retention basins with adequate capacity to handle projected flows generated by each development, as determined by the City. The proposed project will also be subject to requirements of the RWQCB regarding short-term and long-term water quality impacts. The application of these standards and practices at proposed development sites would result in a minimization of the combined impact.

Therefore, the cumulative stormwater runoff and contamination impact is considered **less than significant**.

LAND USE PLANNING

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Potential for Urban Decay Due to Secondary Cumulative Economic Impacts

Impact 3.9-7 The proposed project, combined with other foreseeable projects in the City of Delano may result in the closure of businesses in the City of Delano. However, business retention and expansion programs currently in place, as well as Chapter 7.32, Property Maintenance and Chapter 9.26, Graffiti of the City of Delano Municipal Code would ensure that urban decay due to secondary cumulative land use impacts would not occur. This is considered a **less than significant impact.**

The retail market impact analysis conducted by ADE assessed the impacts of the proposed project in the context of other likely commercial developments in the market area or affecting the market area. In consultation with City staff, the cumulative commercial projects in the City of Delano were identified and utilized in the analysis prepared by ADE. In addition to the Delano Marketplace project, several other large-scale development projects have been discussed and/or proposed for the City of Delano. These projects are generally in a much earlier stage in the approval process with the potential tenants in a somewhat tentative stage. The cumulative projects also include 4,800 units of new housing units in process, and over 145 acres of industrial development in varying stages of the approval process. As defined in this early stage, these cumulative projects would add approximately 1.9 million square feet of new commercial space to the City of Delano market. Because the phasing of these projects is unknown, the analysis incorporated herein is up to the year 2030.

Based on some preliminary information and assumptions about large retail centers located within the City of Delano, the analysis assumes that approximately 36 percent of the square footage would go towards General Merchandise stores (such as department stores, warehouse clubs, and other general merchandise retailers), while eating places would occupy another 17 percent of the floor space. The remaining 47 percent would go to other types of retail such as specialty retail, clothing stores, office supplies, and home improvement. The sales potential for the cumulative projects totals approximately $488 million. This would potentially cause new market pressures for existing businesses, as well as businesses locating in the proposed project. With the shopping center in operation, the annual retail sales in the regional market area will total approximately $535 million. This compares with the $784 million of total household spending in the market area. This results in a regional capture of $78 million, compared to a total spending leakage of $327

million. Much of the regional capture will be accounted for by the home centers. Spending leakage, even with the proposed project, will occur in most other retail categories.

By 2030, the cumulative projects together will recapture approximately $212 million of the $327 million in retail leakage. The remaining $277 million of the $488 million in retail sales potentially generated by the cumulative projects would capture sales from existing retail stores, about $189 million will affect stores in the City of Delano. These impacts would include stores in the Delano Marketplace project. The impacts of cumulative development would total approximately $189 million by 2030. It should be noted that the cumulative projects will be phased in over time. Therefore, impacts are considered incremental impacts.

Of the impacts associated with the cumulative projects in 2030, one of the largest categories is Department and General Merchandise, which includes discount stores and traditional department stores. This retail category will exert an impact of about $67 million. Despite a growing population, there is still insufficient enough unmet demand from consumer households. Thus, general merchandise stores that would potentially anchor the cumulative project developments would potentially achieve store sales by cutting into local retailers. This would likely include the existing K-Mart and J.C. Penney stores, as well as the Wal-Mart Supercenter developed as part of Delano Marketplace. The impacts will vary with the tenant mix. For example, a traditional department store would likely affect the proposed Wal-Mart Supercenter less than a competing discount store with grocery sales or a warehouse club (which also sells groceries).

Grocery stores is another category in which the cumulative projects will continue to affect local supermarkets, in addition to the negative impacts associated with the proposed project. By 2030, the proposed project would exert an incremental impact of $20 million on local grocery stores. These cumulative projects would further undercut the sales for existing supermarkets, and could potentially result in at least one additional store closure. As mentioned earlier, if the store closure is Save Mart, then it could potentially affect other stores in the Delano Village Shopping Center.

Specialty retail stores will absorb a cumulative impact of $21 million in 2030. Given that the existing retail sales in this category total less than $10 million after the development of the proposed project, much of this impact will also affect any new specialty retailers that are part of the proposed project. The impacts in this category will vary with the final tenant mix.

Eating places is another category with a significant impact potential. The projected impact for 2030 totals $55 million, which would contribute to significant displacement of existing eating places, including those establishments locating in the proposed project.

Cumulative Urban Decay Potential

The 1.9 million square feet of new commercial space from the cumulative projects will generate higher retail sales than the population growth through 2030 may able to support. This puts additional market pressures on vulnerable retail centers and shopping districts, resulting in approximately $189 million of economic impact on existing stores (including those in the Delano Marketplace). This impact would potentially result in additional store closures and retail vacancies.

Because of the presence of strong anchor tenants that will continue to attract shoppers, the proposed project will likely remain a viable retail center for the foreseeable future. Even if the economic impacts from cumulative projects inordinately reduce sales for the proposed project and create retail vacancies among the secondary tenants, the anchor tenants will likely ensure that the buildings and facilities continue to be maintained.

Even though the Central Business District could also potentially lose businesses once all of the cumulative projects come online, the role of Central Business District will likely continue to evolve, and continued investment and maintenance in the downtown area, which will ensure that physical deterioration or urban decay does not occur. The continued growth in the Delano market will create other business opportunities, particularly with service establishments, even if the cumulative projects erode market support for downtown retail stores. Service businesses have already moved into vacant retail spaces in the Central Business District, so the market already exists for this type of space reuse.

Depending on the composition of the commercial tenants that would locate in the cumulative projects, new retail space in the City could potentially result in store closures in the Delano Village, Cecil Plaza, and Randolph Village shopping centers. The magnitude of the additional impacts from the cumulative projects could potentially result in the abandonment of Delano Village and/or Cecil Plaza. The magnitude of the additional impacts from cumulative projects could threaten the viability of Delano Village and/or Cecil Plaza due to its proximity to existing service businesses located in the Central Business District. The potential for re-tenanting of those properties would depend on the prospects for market growth to create other tenanting or reuse options for those retail centers. As with downtown, service establishments can potentially move into vacant retail spaces in Cecil Plaza due to its proximity to existing service businesses located in the Central Business District.

Delano Village has a high visibility location, but the market support for retail tenants in that shopping center would potentially decline as the cumulative projects are built out. With the larger store spaces, other options may need to be identified if new retail tenants cannot be found. These options include building demolition and using the site for other types of land uses if the market conditions force the retail uses at the center to vacate.

Preventing the re-tenanting of buildings under cumulative conditions at the Delano Village and Cecil Plaza shopping centers will depend on whether the projected population growth for Delano can be channeled towards other uses that would fill these types of smaller infill sites. The City of Delano has several business retention and expansion programs already in place, including an Enterprise Zone that provides tax credits, accelerated depreciation and other fiscal incentives; a Redevelopment Agency-sponsored façade improvement program that provides up to $10,000 for exterior renovations; and a small business loan program limits. If the proposed project and cumulative projects create store vacancies in the City, these programs would assist businesses to ensure that there are not prolonged vacancies which result in urban decay. In addition to market solutions such as reuse and re-tenanting, Chapter 7.32, Property Maintenance and Chapter 9.26, Graffiti of the City's Municipal Code would ensure that properties are maintained should any stores be vacated within the City limits under cumulative conditions. With these City policies and programs in place, the proposed project would have a **less than significant cumulative impact** with respect to urban decay and physical deterioration at the K-Mart store, Randolph Village, Cecil Plaza Shopping Center, Delano Village Shopping Center and the Central Business District.

NOISE

Cumulative Noise Levels

Impact 3.10-5 Predicted noise levels at residential dwellings located along primarily affected roadways could potentially exceed the City's land use compatibility standards (Table 3.10-2), at nearby residential dwellings. As a result, this impact is considered **significant**.

Table 3.10-8, Predicted Cumulative (2030) Traffic Noise Levels summarizes the predicted noise levels for "Cumulative Without Project" and "Cumulative (2030) Plus Project" conditions and resultant increases in traffic noise levels attributable to the proposed project for primarily affected roadway segments located in the vicinity of the project site. Under "Cumulative (2030) Plus Project," predicted traffic noise levels along adjacent roadway segments would increase by approximately 0.21 to 1.75 dBA. The proposed project would not, in and of itself, contribute to a substantial increase (i.e., 5 dBA or greater) in predicted future traffic noise levels. However, the proposed project would contribute, on a cumulative basis, to predicted future noise levels at land uses located near primarily affected roadways that could potentially exceed the City's land use compatibility standards (**Table 3.10-3, Maximum Allowable Noise Exposure-Transportation Noise Sources**). As a result, the project's contribution to future cumulative noise levels would be considered a **significant impact**.

TABLE 3.10-8
PREDICTED TRAFFIC NOISE LEVELS
CUMULATIVE (2030) CONDITIONS

Roadway Segments	Predicted Noise Level (dBA CNEL/L_{dn}) at 50 Feet from Near Travel Lane Centerline*		
	Cumulative (2030)		Predicted Increase
	Without Project	With Project	
Woollomes Avenue, Albany Street to Dover Parkway	67.45	68.34	0.89
Woollomes Avenue, Dover Parkway to Site Access	71.13	71.81	0.68
Woollomes Avenue, Site Access to Garzoli Avenue	71.60	72.56	0.96
Woollomes Avenue, Garzoli Avenue to State Route 99	71.75	72.78	1.03
Woollomes Avenue, State Route 99 to Lexington Street	69.63	70.66	1.03
Albany Street, Woollomes Avenue to 1st Avenue	69.06	69.75	0.69
Stradley Avenue, Woollomes Avenue to Schuster Avenue	67.03	67.24	0.21
Garzoli Avenue, Woollomes Avenue to Schuster Avenue	62.87	64.62	1.75
Garzoli Avenue, Schuster Avenue to Pond Road	67.16	67.81	0.65
Pond Road, Garzoli Avenue to State Route 99	69.15	69.38	0.23

Source: AMBIENT Air Quality & Noise Consulting 2007

*Note: *Traffic noise levels were modeled using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) based on traffic information (e.g., average daily traffic, vehicle speeds, roadway width) obtained from the data prepared for this project. Modeling assumes no natural or human-made shielding (e.g., vegetation, berms, walls, buildings).*

Sound walls are typically the preferred method of mitigating exterior noise levels at noise-sensitive receptors. However, given that access to receptors located along primarily affected roadways would need to be maintained and openings in the barrier would not effectively block noise, construction of acoustically effective sound walls would not be considered feasible. No additional feasible mitigation measures have been identified to reduce this impact to a less than significant level; therefore, the cumulative impact is considered **significant and unavoidable**.

PUBLIC SERVICE AND FACILITIES

Impact 3.11-5 The proposed project, in addition to anticipated cumulative development in the project vicinity, may result in the need for increased public services and facilities. These impacts are considered to be **less than significant**.

The proposed project's contribution to cumulative public services and facilities impacts will be addressed by payment of all applicable development impact fees, which would also be assessed on any future development in the City of Delano. As a result, the impacts associated with providing facilities for cumulative development are considered **less than significant**.

TRAFFIC AND CIRCULATION

Level of Service Under Cumulative (2030) Project Conditions

Impact 3.12-8 Implementation of the proposed project combined with approved and pending projects anticipated to be completed by the year 2030 would result in the cumulative generation of approximately 96,334 trips, which would result in unacceptable levels of service during the AM, PM and/or Weekend peak hours at all of the 14 study intersections and 11 study roadway segments. This is considered a **significant cumulative impact**.

Cumulative Trip Generation

The distribution of project traffic to the adjacent road network was performed by manual methods based on review of the traffic volumes projected using the Kern County travel model. Kern COG maintains a computerized traffic model for use in forecasting future traffic volumes based on buildout of land uses contained within the approved General Plan. Year 2030 traffic volumes were projected by assuming a growth rate of two percent per year applied to the existing traffic volumes, in addition to pending projects. The resulting traffic volumes were typically comparable to, and slightly greater than, the volumes resulting from the traffic model projections. **Table 3.12-19, Future Projects** summarize the projected cumulative traffic volumes.

TABLE 3.12-19
FUTURE CUMULATIVE PROJECTS

Land Use	ITE Code	Units	Peak Hour Traffic Volumes						Weekday Traffic Volumes
			AM		PM		Weekend		
			Enter	Exit	Enter	Exit	Enter	Exit	
Delano Vineyard Plaza Phase II (Pacific Advisors) (Shopping Center)	820	599,000 sq. ft.	377	241	1,079	1,169	1,549	1,429	25,722
Delano Marketplace II (Shopping Center)	820	549,000 sq. ft.	342	219	980	1,061	1,406	1,298	23,360
Delano Marketplace III (Shopping Center)	820	541,658 sq. ft.	341	218	955	1,057	1,400	1,293	23,260
Delano Marketplace II	221	112	13	48	49	27	14	52	962

Land Use	ITE Code	Units	Peak Hour Traffic Volumes						Weekday Traffic Volumes
			AM		PM		Weekend		
			Enter	Exit	Enter	Exit	Enter	Exit	
(Low-Rise Apartment)		Units							
Delano Marketplace II (Single Family Detached Housing)	210	141 Homes	27	79	90	53	72	61	1,350
Delano Marketplace III (Single Family Detached Housing)	210	195 Homes	37	110	124	73	99	85	1,868
Reynen & Bardis/Villas at Vintage Park (Annexation)Single Family Detached Housing	210	1,671 Homes	314	940	1,064	625	849	723	15,992
Centex Homes/Workman Bros.Single Family Detached Housing	210	399 Homes	75	225	254	149	203	173	3,820
		Totals	**1,526**	**2,080**	**4,535**	**4,214**	**5,592**	**5,114**	**96,334**

Intersection Level of Service

The results of the intersection LOS calculations for "Cumulative (2030) Project" conditions are shown below in Table 3.12-20, Intersection Level of Service Under Cumulative (2030) Project Conditions.

All of the 14 intersections would operate at an unacceptable level of service of LOS D or worse, during the AM, PM, and/or Weekend peak hours, under "Cumulative (2030) Project" conditions.

TABLE 3.12-20
INTERSECTION LEVEL OF SERVICE UNDER
CUMULATIVE (2030) PROJECT CONDITIONS

Intersections	Level of Service		
	AM	PM	Weekend
Woollomes Avenue/Albany Street	F (B)	F (C)	F (C)
Woollomes Avenue/Dover Parkway	F (B)	F (D)	F (D)
Woollomes Avenue/Site Access	F (B)	F (D)	F (D)
Woollomes Avenue/Garzoli Avenue	F (A)	F (C)	F (C)
Woollomes Avenue/SR 99 SB Ramps	F (A)	F (C)	F (C)
Woollomes Avenue/SR 99 NB On-Ramp	C (B)	F (C)	F (D)
Woollomes Avenue/SR 99 NB Off-Ramp (High Street)	F (B)	F (C)	F (D)
Woollomes Avenue/Lexington St.	C (B)	F (B)	F (B)
Pond Road/SR 99 NB Ramps	F (B)	F (C)	-
Pond Road/SR 99 SB Ramps	F (B)	F (C)	-
Pond Road/Stradley Avenue	D (B)	F (C)	-
Pond Road/Garzoli Avenue	F (C)	F (C)	-
Schuster Road/Stradley Avenue	F (B)	F (C)	-
Schuster Road/Garzoli Avenue	E (B)	F (B)	-

Source: Peters Engineering Group 2006

Notes: NB = Northbound; SB = Southbound. Mitigated LOS shown in parentheses. See Discussion for associated improvements

Roadway Segment Level of Service

The results of the roadway segment LOS calculations for "Cumulative (2030) Project" conditions are shown below in Table 3.12-21, Roadway Segment Level of Service Under Cumulative (2030) Project Conditions.

TABLE 3.12-21
ROAD SEGMENT LEVEL OF SERVICE UNDER
CUMULATIVE (2030) PROJECT CONDITIONS

Road Segment and Direction	Lanes & Median		AM		PM		Weekend	
			Vol	LOS	Vol	LOS	Vol	LOS
WOOLLOMES AVENUE BETWEEN:								
Albany Street and Dover Parkway	EB	1U	655	D (C)	1496	F (C)	1597	F (C)
	WE	1U	718	D (C)	1570	F (C)	1603	F (C)
Dover Parkway and Site Access	EB	1U	812	F (C)	2094	F (D)	2186	F (D)
	WE	1U	1001	F (C)	2254	F (D)	2340	F (D)
Site Access and Garzoli Avenue	EB	1U	962	F (C)	2336	F (D)	2698	F (F)
	WE	1U	1128	F (C)	2409	F (D)	2721	F (F)
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	1190	F (C)	2494	F (E)	2735	F (F)
	WB	1U	1244	F (C)	2539	F (E)	2857	F (F)
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	960	F (C)	1956	F (D)	2079	F (D)
	WB	1U	1102	F (C)	1985	F (D)	2196	F (D)
NB SR 99 Ramps and Lexington Street	EB	1U	510	D (C)	1013	F (C)	1016	F (C)
	WB	1U	513	D (C)	884	F (C)	959	F (C)
ALBANY STREET/STRADLEY AVENUE BETWEEN:								
Schuster Road and Woollomes Avenue	NB	1U	424	C	523	D (C)	626	D (C)
	SB	1U	344	C	562	D (C)	704	D (C)
Woollomes Avenue and 1st Street	NB	1U	598	D (C)	973	F (C)	1029	F (C)
	SB	1U	625	D (C)	960	F (C)	1185	F (D)
GARZOLI AVENUE BETWEEN:								
Pond Road and Schuster Road	NB	1U	378	C	910	F (C)	-	-
	SB	1U	564	D (C)	749	D (C)	-	-
Schuster Road and Woollomes Avenue	NB	1U	526	D (C)	618	D (C)	297	C
	SB	1U	293	C	761	E (C)	395	C
POND ROAD BETWEEN:								
Garzoli Avenue and SB State Route 99 Ramps	EB	1U	799	E (C)	777	E (C)	-	-
	WB	1U	410	C	999	F (C)	-	-
SB State Route 99 Ramps and NB State Route 99 Ramps	EB	1U	475	C	395	C	-	-
	WB	1U	316	C	732	D (C)	-	-

Source: Peters Engineering Group 2006

Notes: Vol. – Volume; U – Undivided road; EB – Eastbound; WB – Westbound; NB – Northbound; SB – Southbound.

Impact 3.12-1 and **Impact 3.12-2** identify mitigation measures necessary to improve the intersection and roadway segment level of service deficiencies under "Opening Year (2007) Project" conditions and "Near-Term (2010) Project" conditions, respectively. These improvements would redistribute traffic volumes. The proposed project plus pending and approved projects anticipated to be completed by the year 2030 would result in the generation of approximately 96,334 cumulative trips on the improved intersections and roadway segments. The trips generated by cumulative development would reduce the operations of all of the study intersections and all but one of the study roadway segments to an unacceptable level of service. This would be considered a **significant cumulative impact**. The following mitigation measure would improve operations of the study intersections and roadway segments within acceptable levels of service.

Mitigation Measure

MM 3.12-8a The project applicant shall pay their proportionate fair share contribution towards the following improvements prior to occupancy of the proposed project. Fees applicable to the proposed project would include the applicable "per trip" traffic impact fees for the following improvements in accordance with the most recent City of Delano traffic impact fee program. Fees applicable to the proposed project would include the proposed "per trip" traffic impact fee of approximately $237.00 per vehicle trip and approximately $66.93 per trip for the proposed improvements to the Woollomes Avenue/State Route 99 interchange, which shall be paid to the City prior to occupancy of the proposed project. An update to the City of Delano Impact Fee Program is proposed for adoption by the City Council in May 2007.

- **Woollomes Avenue between Albany Street and Lexington Street**. Construct Woollomes Avenue to accommodate three through travel lanes in each direction. Coordinate all traffic signals on Woollomes Avenue between Albany Street and Lexington Street.

- **Woollomes Avenue/Albany Street Intersection**. Signalize and construct the intersection to provide two southbound left-turn lanes; protected left-turn phasing; and dedicated right-turn lanes. Any interim intersection improvements (i.e. **MM 3.12-2**) constructed by the project applicant that can be incorporated into the ultimate intersection configuration shall be credited against the fair share contribution of the traffic mitigation fees.

- Woollomes Avenue/Dover Parkway Intersection**.** Signalize and construct the intersection to accommodate two left-turn lanes and protected left-turn phasing on all four approaches; three through lanes; and one eastbound right-turn lane.

- **Woollomes Avenue/Site Access Intersection**. Signalize and construct the intersection to accommodate protected left-turn phasing in the eastbound and westbound directions; two northbound left-turn lanes, two westbound left-turn lanes (350 feet), and two eastbound left-turn lanes (required if modification of the existing driveway on the north side of Woollomes Avenue is feasible); three through lanes; and one eastbound right-turn lane and westbound right-turn lane. Coordinate the traffic signals with the SR 99 ramp intersections.

- **Woollomes Avenue/Lexington Intersection**. Signalize and construct the intersection to accommodate protected left-turn phasing and a dedicated left-turn lane for the northbound left turn; and two eastbound left-turn lanes.

- **Schuster Road/Stradley Road Intersection**. Provide all-way stop sign control at the intersection of Schuster Road and Stradley Avenue.

- **Pond Road/Stradley Road Intersection** - Provide all-way stop sign control at the intersection of Pond Road and Stradley Avenue.

- **Schuster Road/Garzoli Avenue Intersection**. Signalize and reconfigure the intersection to provide protected left-turn phasing and a dedicated left-turn lane for the northbound left turn.

- **Pond Road/Garzoli Avenue Intersection**. Signalize and reconfigure the intersection to provide protected left-turn phasing and dedicated left-turn lanes; and two southbound left-turn lanes.

- **Pond Road/State Route 99 Southbound Ramps**. Signalize and reconfigure the intersection to provide protected left-turn phasing and dedicated left-turn lanes; and two eastbound left-turn lanes in accordance with Transportation Systems and Congestion Management Policy 7 of the *City of Delano General Plan*.

- **Pond Road/State Route 99 Northbound Ramps**. Signalize and reconfigure the intersection to provide protected left-turn phasing and dedicated left-turn lanes; and two northbound left-turn lanes in

accordance with Transportation Systems and Congestion Management Policy 7 of the *City of Delano General Plan*.

Implementation of mitigation measure **MM 3.12-8a** would require the project applicant contribute applicable "per trip" traffic impact fees, prior to occupancy of the proposed project, toward a series of intersection, roadway, and interchange improvements required as a result of future development anticipated by the year 2030 in accordance with the City's most recent update to the traffic mitigation fee program. Payment of the traffic mitigation fees would satisfy the cumulative impact associated with the proposed project.

With implementation of mitigation measure **MM 3.12-8a**, the Woollomes Avenue/Dover Parkway and Woollomes Avenue/Site Access intersections would operate at LOS D during the PM and Weekend peak hour and the Woollomes Avenue/State Route 99 NB On-Ramp and Woollomes Avenue/State Route 99 NB Off-Ramp (High Street) intersections would operate at LOS D during the Weekend peak hour. Roadway Classification Standards Policy 11 in the *City of Delano General Plan* states that Freeway interchanges and high volume locations, where it is not feasible to achieve and maintain LOS C shall be designed to achieve and maintain LOS D for a period of at least 20 years following their construction. Woollomes Avenue from Lexington Avenue to Albany Street would be considered a high volume arterial due to the designation of commercial uses along the corridor in the *City of Delano General Plan* and the projected high turning movement volumes. According to Peters Engineering, mitigation measure **MM 3.12-8a** represents the recommended improvements along Woollomes Avenue that would be feasible at this location given the configuration of Woollomes Avenue under cumulative conditions (e.g. three travel lanes in each direction). Therefore, these intersections would operate within City standards under "Cumulative (2030) Project" conditions and this impact would be considered less than significant.

With implementation of mitigation measure **MM 3.12-8a**, the Albany Street roadway segment (both eastbound and westbound) between 1st Street and Woollomes Avenue would operate at LOS D during the Weekend peak hour. With implementation of this mitigation measure, Woollomes Avenue would operate at LOS D during the PM and Weekend peak hours between Dover Parkway and the Site Access and between SB State Route 99 Ramps and NB State Route 99 Ramps in both the eastbound and westbound direction; at LOS D during the PM peak hour and Weekend peak hour in both the eastbound and westbound direction and at LOS F during the Weekend peak hour between the Site Access and Garzoli Avenue; and at LOS E during the PM peak hour in both the eastbound and westbound direction and LOS F during the Weekend peak hour between Garzoli Avenue and State Route 99 Ramps in both the eastbound and westbound direction.

According to Peters Engineering Group, in order to provide acceptable levels of service along Woollomes Avenue at those roadway segments that are operating below LOS D, four

through lanes would be required in each direction. Traffic operations in urban areas with closely spaced intersections are governed by the operations of the intersections rather than the road segments themselves. During the peak periods when the intersections are operating at LOS D, these short road segments provide storage capacity for the intersections. Construction of more than three through lanes is not recommended as research indicates that the marginal capacity of additional lanes is not proportional to the number of additional lanes and that each additional lane diminishes the capacity at every signalized intersection along the roadway due to the following factors: longer yellow clearance intervals would be required to allow vehicles on cross streets to cross through the intersection, which would create longer red intervals and greater delays along Woollomes Avenue; longer pedestrian intervals would be required to allow sufficient time for pedestrians to cross Woollomes Avenue; and lane utilization factors would decrease as a result of drivers maneuvering for upcoming turning movements, which would result in certain through lanes being heavily utilized while other through lanes would be under utilized. According to Peters Engineering Group, the marginal benefits of a fourth through lane on Woollomes Avenue would not improve the level of service to acceptable levels of service. However, since Woollomes Avenue, between the Site access and the Southbound State Route 99 ramps, would operate at LOS F during the Weekend peak hour and would operate at LOS E during the PM peak hour and LOS F during the Weekend peak hour between Garzoli Avenue and State Route 99, even with the incorporation of mitigation, this would be considered a **significant and unavoidable cumulative impact** to these roadway segments.

Level of Service at the Woollomes Avenue/State Route 99 Interchange Under Cumulative (2030) Project Conditions

Impact 3.12-9 Implementation of the proposed project combined with approved and pending projects anticipated to be completed by the year 2030 would result in additional trips to the Woollomes Avenue/State Route 99 interchange, which is projected to operate at an unacceptable level of service. This is considered a **potentially significant cumulative impact**.

In addition to specific intersection and roadway segment improvements, the cumulative trips would result in the need for increased capacity at the Woollomes Avenue/ State Route 99 interchange. This would be considered a **potentially significant cumulative impact**. Implementation of mitigation measures **MM 3.12-1c** and **MM 3.12-1d** requires that the project applicant prepare a PSR/PR in accordance with Caltrans requirements for the Woollomes Avenue/State Route 99 interchange. The PSR/PR shall evaluate interchange options under "Opening Year (2007) Project" conditions and "Cumulative (2030) Project" conditions. The PSR/PR shall include a conceptual configuration that has been accepted by Caltrans and identify recommended alternatives for reconstruction of the interchange in order to improve operations to an acceptable level of service, including loop ramps for the

ultimate interchange configuration to provide capacity under "Cumulative (2030) Project" conditions. The PSR/PR shall determine the equitable share contributions. Since the proposed project will contribute traffic to the Woollomes Avenue/State Route 99 interchange, the project applicant will required to contribute traffic impact fees toward the ultimate reconstruction of the interchange prior to operation of the proposed project. The following mitigation measure would ensure that the project applicant contribute their proportional "fair share" toward interchange improvements in accordance with the City of Delano Impact Fee Program.

Mitigation Measure

MM 3.12-8b The project applicant shall pay their proportionate fair share contribution towards the ultimate reconstruction of the Woollomes Avenue/State Route 99 interchange that is identified in the PSR/PR prepared as required by mitigation measure **MM 3.12-1c** prior to occupancy of the proposed project in accordance with the City of Delano's traffic mitigation fee program. Fees applicable to the proposed project would include the proposed "per trip" traffic impact fee of approximately $237.00 per vehicle trip and approximately $66.93 per trip for the proposed improvements to the Woollomes Avenue/State Route 99 interchange, which shall be paid to the City prior to occupancy of the proposed project. An update to the City of Delano Impact Fee Program is proposed for adoption by the City Council in May 2007. Contribution towards the ultimate interchange reconstruction shall be in accordance with Transportation Systems and Congestion Management Policy 7 of the *City of Delano General Plan*. Any interim improvements constructed by the project applicant that can be incorporated into the ultimate interchange configuration shall be credited against the fair share contribution of traffic impact fees that shall be determined in the PSR/PR.

Implementation of mitigation measure **MM 3.12-8b** would require the project applicant to contribute their proportionate "fair share" of traffic mitigation fees towards interchange improvements in accordance with the *City of Delano Impact Fee Program* required as a result of cumulative development anticipated by the year 2030. Implementation of these improvements would improve operations at the intersection and roadway segments within the vicinity of the interchange to acceptable levels of service. Payment of the traffic mitigation fees would satisfy the cumulative impacts associated with the proposed project. Therefore, the cumulative traffic impact to the Woollomes Avenue/State Route 99 interchange would be reduced to a **less than significant** level.

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6.0 Other Sections Required by CEQA

This section discusses the long-term implications of the proposed project as required by CEQA. The topics discussed include significant irreversible environmental changes/irretrievable commitment of resources, growth-inducing impacts and significant and unavoidable environmental effects, and effects found not to be significant.

6.1 IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA REQUIREMENT

Public Resources Code Section 21100(b)(2)(B) requires an Environmental Impact Report to include a detailed statement setting forth any significant effects on the environment that would be irreversible if a proposed project is implemented. Examples of irreversible environmental changes, as set forth in CEQA Guidelines Section 15126.2(c), include the following:

- The proposed project would involve a large commitment of nonrenewable resources such that removal or nonuse thereafter is unlikely;
- The primary and secondary impacts of a proposed project would generally commit future generations to similar uses (e.g. a highway providing access to a previously inaccessible area);
- The proposed project involves uses in which irreversible damage could result from any potential environmental accidents associated with the proposed project; or,
- The phasing of the proposed consumption of resources is not justified (e.g., the proposed project involves the wasteful use of energy).

A proposed project would result in significant irreversible effects if it is determined that key resources would be degraded or destroyed to the extent that there is little possibility of restoring them. Irreversible environmental changes should be evaluated to assure that such current consumption is justified (CEQA Guidelines Section 15126.2(c)).

ANALYSIS

The proposed Delano Marketplace project would result in an increased intensity of development, with the conversion of vacant, rural residential and commercial land uses land to a regional shopping center. A variety of nonrenewable and limited resources would be irretrievably committed for proposed project construction and maintenance, including, but not limited to, oil, natural gas, gasoline, lumber, sand and gravel, asphalt, steel, water, land, energy, construction materials and human resources. In addition, the proposed project would result in an increase in demand on public services and utilities.

An increase in the intensity of land uses on the site would result in an increase in regional electric energy consumption to satisfy additional electricity demands from the proposed project. These energy resource demands relate to initial proposed project construction, transport of people and goods, and lighting, heating and cooling of buildings.

Development of the site to support urban uses may be regarded as a permanent and irreversible change. Site development would essentially eliminate any potential agricultural production on the site. Grading, utility extensions, drainage improvements, new and improved roadways and construction of buildings would permanently alter the character of the site to one that is urbanized. The proposed project would generally commit future generations to similar urban uses on the project site.

6.2 GROWTH INDUCING IMPACTS

CEQA REQUIREMENT

Public Resources Code Section 21100(a)(5) requires that the growth-inducing impacts of a project be addressed in the EIR. A project may be growth-inducing if it directly or indirectly fosters economic or population growth or additional housing, removes obstacles to growth, taxes community services facilities or encourages or facilitates other activities that cause significant environmental effects (CEQA Guidelines Section 15126.2(d)). Direct growth-inducing impacts result when the development associated with a project directly induces population growth or the construction of additional developments within the same geographic area. These impacts may impose burdens on a community or encourage new local development, thereby triggering subsequent growth-related impacts.

The analysis of potential growth-inducing impacts includes a determination of whether a project would remove physical obstacles to population growth. This often occurs with the extension of infrastructure facilities that can provide services to new development. Indirect growth-inducing impacts result from projects that serve as catalysts for future unrelated development in an area. Development of public institutions, such as colleges, and the introduction of employment opportunities within the same geographic area, are examples of projects that may result in direct growth-inducing impacts.

CEQA provides no criteria for determining if induced growth is detrimental or beneficial. Induced growth is considered a significant impact only if it directly or indirectly affects the ability of agencies to provide needed public services, or if it can be demonstrated that the potential growth could significantly affect the environment in some other way.

ANALYSIS

Precedent for Further Expansion of the Urban Area and Removal of Obstacles to Growth

The project site is located within the City limits of Delano and approval of the proposed project would not represent a new commitment of rural lands for urban development. The project site has an existing General Plan land use designation of "Commercial", "Service Commercial" and "Industrial." The majority of the project site is currently zoned "CRC" (Community Retail Commercial), with a portion zoned "GC" (General Commercial). One of the primary purposes of the "CRC" district is to provide suitable locations for commercial uses requiring large parcels. The primary purpose of the "GC" district is to provide sites for commercial uses that will serve a large segment of the population with a wide variety of retail, wholesale, service and office uses. Therefore, the proposed project would be consistent with acceptable uses for land use and zoning designations and would not represent a new commitment of land for urban development.

Mitigation measures incorporated into the EIR for the proposed project include improvements to the State Route 99/Woollomes Avenue interchange and portions of Woollomes Avenue, Albany Street/Stradley Avenue, and Garzoli Avenue in the vicinity of the project site. However, these roads have been identified in the *City of Delano General Plan* (City of Delano 2005) as arterial streets that have not yet been developed to full arterial standards, four lanes with a center median. Therefore, widening of these streets would not involve construction of excess infrastructure capacity beyond that identified in the *City of Delano General Plan*.

The proposed project would construct a new storm drain line along Woollomes Avenue from the project site to an existing retention basin owned by the City of Delano. This pipe is slightly over-sized regarding anticipated flows from the proposed project; however, the area west of the project site is designated for commercial and medium-density residential uses by the *City of Delano General Plan*.

Stimulus for Economic Growth

The proposed regional shopping center would stimulate growth by providing employment opportunities, as well as indirect growth through demand for goods and services. This could contribute to incremental secondary effects such as increased hiring by suppliers. The retail establishments would also generate significant sales tax revenue for the City, which could enable expenditures on capital improvement projects and/or City programs that would also stimulate secondary economic activity. During the construction phase, temporary jobs would be created and others supported in the purchase of materials.

Population and Housing Growth

Local residents in Delano could fill some of the job openings provided by the proposed project. To the extent that new employees of the proposed project would not already live within an acceptable commute range of the project site, they could be induced to move to the area, thus creating a slight increase in local housing demand. However, this minor increase in housing demand would not be significant and could be readily absorbed by the local housing inventory. The increase in population is expected to be minimal and should not induce substantial population or housing growth.

6.3 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL EFFECTS

Public Resources Code Section 21100(b)(2)(A) requires an EIR to include a detailed statement setting forth any significant effects on the environment that cannot be avoided if a project is implemented. CEQA Guidelines Section 15126.2(b) states that such impacts include those, which can be mitigated but not reduced to a level of insignificance. In addition, Section 15093(a) of the CEQA Guidelines allows the decision-making agency to determine if the benefits of a proposed project outweigh the unavoidable adverse environmental impacts of implementing the proposed project. The City of Delano can approve a proposed project with unavoidable adverse impacts if it prepares a "Statement of Overriding Considerations" setting forth the specific reasons for making such a judgment. The Statement of Overriding Considerations is a statement of the City of Delano's views on the ultimate balancing of the merits of approving a project despite its environmental damage. The Statement of Overriding Considerations must be in writing and state specific reasons supporting the City's action based on the Final EIR or other substantial evidence in the record. Substantial evidence includes facts, reasonable assumptions predicated upon facts and expert opinions supported by facts. Substantial evidence is not argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly inaccurate or erroneous, or evidence of social or economic impacts which do not contribute to or are not caused by physical impacts on the environment.

Based upon the environmental analysis provided in **Section 3.0**, most of the potential impacts associated with the proposed project can be avoided or reduced to a less than significant level through the application of mitigation measures that would be implemented in conjunction with the proposed project. However, there are several significant impacts that cannot be feasibly mitigated to a less than significant level. These significant and unavoidable impacts of the proposed project are listed below:

- **Significant Impacts to Air Quality**
- **Significant Cumulative Impacts to Air Quality**

- **Significant Cumulative Impacts to Noise**
- **Significant Cumulative Impacts to Traffic**

6.4 EFFECTS FOUND NOT TO BE SIGNIFICANT

A significant effect on the environment is generally defined as a substantial or potentially substantial adverse change in the physical environment (CEQA Guidelines Section 15328). The term "environment," as used in this definition, means the physical conditions that exist within the area that will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise and objects of historic or aesthetic significance. The area involved shall be the area in which significant effects would occur either directly or indirectly as a result of the proposed project. The "environment" includes both natural and man-made conditions (CEQA Guidelines Section 15360).

Detailed analyses and discussion of environmental topics found to be significant is provided within **Section 3.0** of this EIR. Listed below are those environmental issues found not to be significant with implementation of the proposed project. This determination is based on the scope the environmental documentation for the proposed project, standards of significance contained within the CEQA Guidelines and the Notice of Preparation process for the proposed project. The completed NOP and responses from the public and affected agencies and organizations are included in the Technical Appendices.

MINERAL RESOURCES

Mineral resource impacts are considered significant if the proposed project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. According to the *City of Delano General Plan*, there are no significant mineral resources or mining operations within the City of Delano or its Sphere of Influence. Implementation of the proposed project would not result in the loss of access to, or availability of, a known mineral resource that would be of value to the county, region or the state. Therefore, **no impact** is expected.

POPULATION AND HOUSING

The City of Delano is a rapidly growing community whose recent increases in population have significantly outpaced the growth throughout the region. The City of Delano's household population expanded to over 39,000 residents by 2005, which makes Delano the second largest city in Kern County. Since 1990, Delano's population has grown by over 72 percent, with an average annual growth of 3.7 percent during this period. This

indicates that Delano has grown substantially faster than Kern County, which has grown at an average annual growth rate of 2.1 percent, and neighboring Tulare County, which has averaged 1.7 percent annual growth.

Kern County as a whole had a 2005 household population base of 720,333 residents, while 403,906 residents live in Tulare County. With the location of Delano right on the county line, the community is in the middle of a region with more than one million household residents.

Population growth rates in the surrounding communities were significant, but considerably lower than in the City of Delano. Bakersfield is the largest city in the region, and with an annual population growth rate of 3.3 percent, its growth also significantly outpaces the regional growth as a whole. Wasco and McFarland each have a smaller population base and a significantly lower growth rate than the City of Delano. Population within the entire region has expanded faster than California's annual growth rate of 1.4 percent during this same period.

The proposed project includes the demolition of five residential homes and construction of a regional shopping center. The residents of these homes can be readily absorbed into the existing housing stock. Therefore, the proposed project would not displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere. The proposed project is estimated to employ approximately 580 people. Some of the job openings provided by the proposed project could be filled by local residents in Delano. New jobs may also result in the migration of future employees to the City of Delano; however, given the existing unemployment situation in Delano, most of these positions would be filled by existing residents of Delano. Any increase in population is expected to be minimal and should not induce substantial population growth. Therefore, the proposed project would have a **less than significant** impact on population and housing.

RECREATION

The project site is currently used for rural residential and limited commercial uses and its conversion to a regional shopping center would not conflict with any established recreational land uses or inhibit the ability to provide recreational opportunities in the future. New jobs created as a result of the proposed project may result in the migration of individuals and households to the City of Delano as residents or commuting workers. However, the increase in population is expected to be minimal and should not result in additional demand for parks and recreation facilities. Therefore, impacts to recreation are considered **less than significant**.

ENERGY ANALYSIS

Although the proposed project will consume large quantities of energy typical of a large retail facility, several aspects of the proposed project will help manage the amount and efficiency of energy consumption and will ensure that the related consumption is not inefficient, wasteful or unnecessary. Under CEQA guidelines, the standards of significance that consider whether a project would have a potentially significant impact on the environment is dependent upon whether the proposed project would result in wasteful, inefficient and unnecessary consumption of energy during construction or operation (Pub. Res. Code Sec. 21100(b)(3) and Appendix F); and/or require or result in the construction of new energy generation or supply facilities or the expansion of existing energy generation supply facilities, the construction of which could cause significant environmental effects.

The City of Delano enforces the requirements of the California Building Standards Code, energy conservation requirements in Title 24, Part 6, California Code of Regulations, for non-residential buildings. The California Energy Commission adopted new Energy Efficiency Standards for Residential and Non-residential Buildings that went into effect on October 1, 2005. Among the reasons that the Energy Commission adopted the 2005 changes to the Building Energy Efficiency Standards was to respond to California's energy crisis to reduce energy bills and increase energy delivery system reliability. The Commission also wanted to emphasize energy efficiency measures that save energy at peak periods and seasons and to improve the quality of installation of energy efficiency measures.

Pursuant to the California building Standards Code and the Energy Efficiency Standards, the Building Inspection Department will review the design components of the project's energy conservation measures when the project's building plans are submitted. These measures include: insulation; the use of energy-efficient heating, ventilation and air conditioning equipment (HVAC); solar-reflective roofing materials; energy-efficient indoor and outdoor lighting systems; the reclamation of heat rejection from refrigeration equipment to generate hot water; the incorporation of skylights, etc.

In terms of energy consumption related to vehicle use, the combination of a grocery store with general merchandise in the Wal-Mart Supercenter will encourage multi-purpose shopping trips and reduce fuel consumption by reducing the number of trips some people might otherwise make between different stores. In addition, the proposed Wal-Mart Supercenter, the largest of the anchor stores within the proposed regional shopping center will be incorporating energy efficient measures into the project design. According to representatives from Wal-Mart, the proposed Wal-Mart Supercenter will be built of nearly 100 percent recycled structural steel. All of the plastic baseboards and much of the plastic shelving would be comprised of 100 percent recycled plastic. The sinks in the restrooms will include sensor-activated low flow toilets. The faucets reduce usage by approximately

84 percent and save approximately 20 percent usage over similar operated systems. Each refrigeration system will include ozone friendly refrigerants. The proposed Wal-Mart Supercenter will incorporate the following energy-related features into the design of the proposed project:

- *Day lighting (skylights/dimming)*. The store will include a day lighting system, which automatically and continuously dims all of the lights as the daylight contribution increases.
- *Night Dimming*. The Wal-Mart Supercenter will dim lighting to about 65 percent illumination during the late night/early morning hours.
- *Energy efficient HVAC units*. The Wal-Mart Supercenter will utilize "super" high efficiency packaged HVAC units. While the industry standard EER (Energy Efficiency Ratio) is 9.0, the units that will be utilized at the store are anticipated to be rated at between 10.8 to 13.2. These units range between 4-17 percent more efficient than required by Title 24.
- *Central Energy Management*. The store will be equipped with energy management systems to be monitored and controlled from Wal-Mart's home office in Bentonville, Arkansas. These systems enable Wal-Mart to monitor energy usage and performance at the store 24 hours per day, seven days per week.
- *Water Heating*. The Wal-Mart Supercenter will capture waste heat from the refrigeration equipment to heat water for the kitchen prep areas of the store. This represents energy savings of 165 million British Thermal Unit (BTU's) per year.
- *White Roof*. The Wal-Mart Supercenter will have a "white" membrane roof vs. most retail stores that have a darker color. The high solar reflectivity of this membrane results in lowering the "cooling" load by about 10 percent. No PVC-roofs will be used.
- *Interior Lighting Retrofit Program*. The Wal-Mart Supercenter will utilize T-8 fluorescent lamps and electronic ballasts. The energy load is reduced by approximately 15-20 percent as a result of this upgrade.
- *LED Signage Illumination*. The Wal-Mart Supercenter will use LED lighting in all of the internally illuminated building signage. The application of LED technology is over 70 percent more energy-efficient than fluorescent illumination. With lamp life ranging to 100,000 hours, using LEDs significantly reduces need to manufacture and dispose of fluorescent lamps.
- *Integrally Cooled Concrete Floors*. The use of concrete floors represents a major reduction of carpet and vinyl tile finishes from new Wal-Mart Supercenter stores.

This reduces environmental concerns with the manufacture and disposal of PVC, it also reduces the need for most chemical cleaners, wax, and wax strippers. The flooring area for the grocery component of the proposed project would be comprised of colored concrete floors.

The proposed Wal-Mart Supercenter will be designed and equipped to recycle oil, tires, auto batteries, cardboard, vegetable oil, single use cameras, bottles and cans, plastic waste, electronic waste, and silver from the processing of photos in the photo processing department.

Compliance with the California Building Standards and the 2005 California Energy Commission Energy Efficiency Standards, as well as incorporation of energy efficient measures in the Wal-Mart Supercenter, the potential for wasteful energy use would result in a **less than significant** impact.

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7.0 Report Preparers and References

7.1 PREPARERS OF THE ENVIRONMENTAL IMPACT REPORT

CITY OF DELANO STAFF

- Abdel L. Salem, City Manager
- King Leonard, Interim Community Development Director
- Lawrence Tomasello, Former Community Development Director
- John Wankum, City Engineer
- Bill Hylton, Superintendent of the Public Utilities Department
- Alan Peake, City Attorney
- William Bopf, Economic Development Director
- Mike McCabe, Senior Planner
- Richelle Carino, Assistant Planner

PMC

- Tad Stearn, Principal
- Erika Spencer, Senior Planner/Project Manager
- Cory Barringhaus, Assistant Planner
- Pamela Lapham, Assistant Planner
- Jenny Mitchell, Assistant Planner
- Joyce Grant Hunting, Director of Biological Resources
- Jessica Nadolski, Conservation Biologist
- John Nadolski, Archaeological and Historical Resources Coordinator
- Kurt Lambert, Archaeological Technician
- Mary Lou Hanley, Administration/Document Production

AMBIENT AIR QUALITY & NOISE CONSULTING

PETERS ENGINEERING GROUP

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