Draft Report
City of Merced South Merced Specific Plan and EIR

April 2007

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DRAFT

ENVIRONMENTAL IMPACT REPORT

South Merced Specific Plan
(Sch# 2006041164)

April 2007

Prepared for:

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AAQS	ambient air quality standard
ADT	average daily traffic
AIA	air impact assessment
APCD	Air Pollution Control District
ATC	Authority to Construct
B.P.	before present
BP	business park
BAAQMD	Bay Area Air Quality Management District
BACT	best available control technology
BMP	best management practices
BTR	Biological Technical Report
CAA	Clean Air Act
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Department of Industrial Relations Division of Industrial Occupation Safety
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCIC	Central California Information Center
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHL	California Historic Landmark
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CNDDB	California National Diversity Database
CNEL	community noise equivalent level
CO	carbon monoxide
CPHI	California Point of Historic Interest
CPTED	Crime Prevention Through Environmental Design
CRHR	Register of Historic Resources
CWA	California Water Act
dB	decibel
dBA	decibels, A-scale
DOT	Department of Transportation
DPR	Department of Parks and Recreation
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
ESA	Endangered Species Act

FAA	Federal Aviation Administration
FAR	floor area ratio
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHWA	Federal Highway Administration
FIP	Federal Implementation Plan
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
GAMAQI	*Guide for Assessing and Mitigating Air Quality Impacts*
GP	General Plan
gpm	gallons per minute
H_2S	hydrogen sulfide
HABS	Historic American Building Survey
HAER	Historic American Engineering Report
HALS	Historic American Landscape Survey
HAP	hazardous air pollutant
HI	hazard index
HSAA	Hazardous Substance Account Act
HWMP	Hazardous Waste Management Program
I-5	Interstate 5
ISR	Indirect Source Review
LAFCo	Local Agency Formation Commission
Ldn	day-night average sound level
Leq	equivalent noise level
LOS	level of service
MBTA	Migratory Bird Treaty Act
MCAG	Merced County Association of Governments
MCFCD	Merced County Flood Control District
mgd	million gallons per day
MID	Merced Irrigation District
MLK	Martin Luther King, Jr. Way
MMC	Merced's Municipal Code
MOU	Memorandum of Understanding
MRZ	Mineral Resource Zone
MUTCD	Manual of Uniform Traffic Control Devices
NAHC	Native American Heritage Commission
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NRHP	National Register of Historic Places

OHP	California Office of Historic Preservation
PM_{10}	particulate matter less than or equal to 10 microns
ppm	parts per million
PRC	Public Resources Code
PTO	Permit to Operate
PUC	Public Utilities Commission
O_3	ozone
OHP	California Office of Historic Preservation
OSHA	Occupational Safety and Health Administration
RACM	reasonably available control measure
RCRA	Resource Conservation and Recovery Act
ROG	reactive organic gas
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SHPO	State Historic Preservation Officer
SHRC	State Historic Resources Commission
SIDS	Sudden Infant Death Syndrome
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMARA	Surface Mining and Reclamation Act
SMMC	Sutter Merced Medical Center
SMSP	South Merced Specific Plan
SO_2	sulfur dioxide
SP	Specific Plan
SR	State Route
SUDP	Specific Urban Development Plan
TAC	toxic air contaminant
TBACT	Toxic Best Available Control Technology
TCP	tribal cultural place
UC	University of California
UPRR	Union Pacific Railroad
USACE	United States Army Corps of Engineers
USC	Universal Soil Classification
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
UV	ultraviolet

VOC	volatile organic compound
WFPT	Western Fluted Point Tradition

ES.1 EXECUTIVE SUMMARY

This document is a draft environmental impact report (EIR) analyzing the potential environmental effects of the South Merced Specific Plan and is tiered from the Merced Vision 2015 General Plan EIR.

According to the *Merced Vision 2015 General Plan*, the South Merced area could benefit especially from improved neighborhood conditions, economic development, more defined land uses, coordinated infrastructure improvements, and expanded services. The *South Merced Strategic Plan* (City of Merced, 2003), accepted by the Merced City Council on January 20, 2004, describes the community's future vision for the South Merced area and outlines strategic implementation actions for achieving that vision. That Strategic Plan serves as the fundamental policy basis for the South Merced Specific Plan.

The City of Merced proposes to adopt a Specific Plan (SP) to revitalize and guide the future development of a 2,052-acre area in the southern portion of the City. The South Merced Specific Plan (Specific Plan or SMSP) involves planning for the development of specific land uses in the South Merced area. The project was defined in the adopted South Merced Strategic Plan (Strategic Plan) (City of Merced, 2003). The Specific Plan area is located in the southern portion of Merced. The Specific Plan study area is bounded on the north by Childs Avenue, by State Route (SR) 99 on the east, by Mission Avenue/Dickenson Ferry Road on the south, and by West Avenue and the Merced Airport on the west. See Figure II-1, Land-Use Concept, and Figure II-2, Topographic Map.

In April 1997, the City of Merced adopted the *Merced Vision 2015 General Plan* (GP) (City of Merced, 1997). The GP encompasses the entire City of Merced and its sphere of influence and, therefore, also covers the proposed SMSP area. The GP Environmental Impact Report (GP EIR) (City of Merced, 1997) (SCH# 95082050) that was prepared in conjunction with the GP analyzed the potential environmental impacts of the adoption and implementation of the GP, including impacts from land development in portions of the proposed SMSP area.

This South Merced Specific Plan EIR (SMSP EIR) is a program EIR that is tiered from the City's Merced Vision 2015 GP EIR. This SMSP EIR focuses on the differences between land-use designations and policies contained in the proposed Specific Plan and the land-use designations and policies in the City's GP for the SMSP area. It also evaluates whether the changes in land-use designations and policies would result in new significant environmental impacts that were not addressed previously in the GP EIR. The Merced Vision 2015 General Plan EIR (City of Merced, 1997) is available for review at the City of Merced.

This SMSP EIR is a program EIR that evaluates the environmental impacts of the proposed Specific Plan at a program level. As specific development projects within the SMSP area are proposed for construction, additional environmental review will be conducted that will analyze the project-specific impacts of each development project. That project-level analysis will tier from both the GP EIR and this SMSP EIR and will address those impacts that are not adequately addressed in these two program EIRs.

As directed by the City of Merced, the environmental analysis was conducted on an approximate of the proposed plan diagram. There are minor differences in the figures (dwelling units, land use acreages, etc.) in the DEIR compared to the proposed plan.

ES.2 PROJECT DESCRIPTION

The project involves planning for the development of specific land uses to occur in the South Merced area as a result of the preparation of a Specific Plan. The South Merced Specific Plan study area comprises 2,052 acres and is bounded on the north by Childs Avenue, by SR 99 on the east, by Mission Avenue/Dickenson Ferry Road on the south, and by West Avenue and the Merced Airport on the west.

A total of 12 different land-use types are proposed for the Specific Plan area based on the land-use concept developed for the Specific Plan. These land use types are as follows:

- Agricultural
- Business Park
- Commercial – General
- Commercial – Neighborhood
- Commercial – Office
- Commercial – Regional
- Industrial
- Open Space / Park and Recreation
- Residential – Low Density
- Residential – Low to Medium Density
- Residential – Village
- School

1. AGRICULTURAL

The Agricultural land-use designation comprises 86 gross acres (65 net acres) of the Specific Plan area. It is in the identified Merced Airport Runway Protection Zone, in the far southwestern corner of the Specific Plan area. It essentially acts as a buffer and compatible use for the potential hazards associated with the airport landing areas.

2. BUSINESS PARK

The Business Park land-use designation comprises 123 gross acres (92 net acres) within the Specific Plan area. The Floor Area Ratio (FAR) is 0.50. The estimated allowable square footage is 2,009,205. As shown on Figure II-1, the Business Park land uses are in several areas: at the intersection of R Street and Gerard Avenue; next to the Commercial General strip along SR 59 and the intersection of West Dickenson Ferry Road; between B Street and Brantley Street; and at the intersection of Mission Avenue and SR 99.

3. COMMERCIAL – GENERAL

The Commercial General land-use designation comprises 123 gross acres (92 net acres) within the Specific Plan area. The FAR is 0.25. The estimated allowable square footage is 1,004,603. As shown on Figure II-1, the Commercial General land-use designation is along the SR 59 corridor.

4. COMMERCIAL – NEIGHBORHOOD

The Commercial Neighborhood land-use designation comprises 20 gross acres (15 net acres) within the Specific Plan area. The FAR is 0.25. The estimated allowable square footage is 163,350. As shown on Figure II-1, the Commercial Neighborhood land-use designation is in two areas: next to the Commercial General strip along SR 59 and the intersection with West Dickenson Ferry Road; and at the village concept, near the intersection of Brantley Street and Mission Avenue.

5. COMMERCIAL – OFFICE

The Commercial Office land-use designation comprises 13 gross acres (10 net acres) within the Specific Plan area. The FAR is 0.25. The estimated allowable square footage is 106,178. As shown on Figure II-1, the Commercial Office land-use designation is in two areas: next to the Commercial General strip along SR 59 and the intersection of West Dickenson Ferry Road; and at the village concept, near the intersection of Brantley Street and Mission Avenue.

6. COMMERCIAL – REGIONAL

The Commercial Regional land-use designation comprises 41 gross acres (31 net acres) within the Specific Plan area. The FAR is 0.25. The estimated allowable square footage is 334,868. As shown on Figure II-1, the Commercial Regional land-use designation is along the southern edge of the Specific Plan area—on the corner of Henry and Mission Avenue.

7. INDUSTRIAL

The Industrial land-use designation comprises 352 gross acres (264 net acres) within the Specific Plan area. The FAR is 0.50. The estimated allowable square footage is 5,749,920. Locating the majority of this land-use type in the southwest portion of the planning area is important because that portion of the planning area is within the Merced Airport Runway Protection Zone, the Approach/Departure Zone, and the Extended Approach/Departure Zone. Each of these zones has limitations regarding what types and intensities can be used. The other location for Industrial land use is proposed in the southeastern corner of the Plan area, between Henry Street and SR 99.

8. OPEN SPACE/PARK AND RECREATION

The Open Space/Park Recreation land-use designation comprises 74 gross acres (56 net acres) within the Specific Plan area. Open Space/Park use locations are most commonly located near residential areas. The only cemetery use is located at SR 59 and Childs Avenue.

9. RESIDENTIAL–LOW DENSITY

The Residential–Low Density land-use designation comprises 888 gross acres (666 net acres) within the Specific Plan area. The development units per acre are seven. The estimated allowable number of development units is 4,662. Most of this land-use type is found between SR 99 and Tyler Road. Residential–Low Density is also found between West Avenue and SR 99, primarily north of Gerard Avenue.

10. RESIDENTIAL–LOW TO MEDIUM DENSITY

The Residential–Low to Medium Density land-use designation comprises 89 gross acres (67 net acres) within the Specific Plan area. The development units per acre are 12. The estimated allowable number of development units is 801. Most of this land-use type is found in pockets near "village concepts"—at the intersection of M Street and Childs Avenue, flanking the main village concept between Tyler Road and Henry Street, just north of Mission Avenue.

11. VILLAGE RESIDENTIAL

The Village Residential land-use designation comprises 117 gross acres (88 net acres) within the Specific Plan area. The development units per acre are 18. The estimated allowable number of development units is 1,580. Most of this land-use type is found between SR 99 and Tyler Road, just north of Mission Avenue, and constitutes the heart of the "village" development located between Tyler Road and Henry Street, just north of Mission Avenue.

12. SCHOOL

The School land-use designation comprises 29 gross acres (22 net acres) of the Specific Plan area. School sites have specific requirements for their location, and the most common and non-conflicting neighboring land use is Residential. The existing school site is at the intersection of N Street and Childs Avenue. The recently approved school site is located at the intersection of G Street and Mission Avenue.

ES.3 PUBLIC AND AGENCY INVOLVMENT

The City of Merced (Lead Agency) distributed a Notice of Preparation (NOP) of an EIR for the South Merced Specific Plan project. The NOP was sent to approximately 60 agencies and individuals on April 25, 2006. The NOP announced a public information/scoping meeting for May 18, 2006, and requested that comments on the content of the EIR be submitted by May 26, 2006. Issues raised at the meetings and in comment letters are discussed in each section of Chapter 4, Discussion of Environmental Impacts. Public review of the Draft EIR was conducted over a 30-day period. (See Appendix [reserved], Responses to Comments.)

The Plan was prepared based on considerable involvement with the citizens of South Merced. The process included a community tour by the CAC to share issues of importance to the community with URS and City planning staff; public community workshops; and numerous one-on-one stakeholder interviews. A general schedule of events guided the planning process.

ES.3.1 Stakeholders (Non-Government)

Overview: Stakeholders represent individuals or groups that do not live or work in the area of the Plan, but could be affected by the land use map or policies of the Plan. For a discussion of meetings with technical stakeholders (i.e., those from local government agencies) see item #3 below. Stakeholders were interviewed about their ideas and concerns for consideration in drafting the Plan. Stakeholders also participated in public workshops and reviewed draft maps and policies pertaining to the Plan. Stakeholders represented the following groups:

- Neighborhood Associations (groups and individuals);
- Local Developers and Builders;
- Building Industry Association (BIA);
- Agricultural Interests;
- Environmental/Conservation Groups; and
- Local Non-Profit Groups.

ES.3.2 Community Workshops and Participation

Overview: Community workshops provided an opportunity for City staff, the CAC, and URS to hold in-depth discussions about South Merced Strategic Plan priorities, specifically concerning land use, mobility, housing, infrastructure, and open space. The community workshops were advertised extensively via newspaper, radio, flyers, and letters to community organizations, reaching out to as many citizens in the Plan area as possible.

Dates: July 13, 2006 (Community Workshop #1)
July 15, 2006 (Community Workshop #2)

Outreach: Flyers in English, Spanish, and Hmong were provided to the Community Partnership Alliance and the Lao Community for distribution, and were posted at the following locations: Merced Transpo Station; several grocery stores adjacent to the planning area; the Jerry O' Banion Learning Center (South Merced's Library); and the Boys and Girls Club.

Public Information Officer Mike Conway spoke on local radio station KYOS on July 5 and July 12, 2006 about the Plan, inviting interested members of the public to attend the community workshops. A news release in the Merced Sun Star about the workshops was presented on July 6, along with a July 10 article concerning the workshop events.

In August 2006, an article about the City's effort to draft a community-based specific plan for South Merced was published in the City's monthly newsletter, which is inserted into utility bills, posted at City Hall, and available on the City's website.

ES.3.3 Technical Advisory Participation

Overview: During the course of the planning period, City staff and URS met or offered to meet with the following local agency staff and committees to discuss and provide guidance on different aspects of the plan:

- City of Merced Economic and Development and Redevelopment Staff;
- Merced Irrigation District;
- Merced County Public Works;
- City of Merced/Development Service Department;
- City of Merced Airport Authority;
- City of Merced Airport Manager;
- Merced County Airport Land Use Commission;
- City of Merced Police Department;
- City of Merced Fire Department;
- City of Merced Community Parks and Recreation;
- Caltrans;
- Merced City School District;
- Weaver Union Elementary School District;
- Merced Union High School District;
- City of Merced Economic Development Advisory Committee;
- City of Merced Development Review Group; and
- Cemetery District.

Environmental Review

Consistent with the California Environmental Quality Act (CEQA) statutes and guidelines, several opportunities for public input were provided concerning the potential environmental impacts of the project. These include:

1. April 2006 – Review and Comment of Initial Study (refer to Appendix __ for distribution list and responses received);
2. May 2006 – CEQA Scoping Meeting;
3. March 2007 – Review and Comment of Draft EIR;
4. June 2007 – Planning Commission Public Hearing; and
5. July 2007 – City Council Public Hearing.

ES.4 ALTERNATIVES CONSIDERED AND PREFFERED ALTERNATIVE

When the project is the revision of an existing land use or regulatory plan, policy or ongoing operation, the "no project" alternative will be the continuation of the existing plan, policy or operation into the future. Typically this is a situation where other projects initiated under the existing plan will continue while the new plan is developed. Thus, the projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan.

A. ALTERNATIVE 1 – NO PROJECT

The "No Project" Alternative is the continuation of the existing General Plan. The projected impacts of the proposed plan or alternative plans will be compared to the impacts that would occur under the existing plan.

After defining the No Project Alternative using one of these approaches, the analyses of possible impacts of the No Project Alternative was conducted by projecting what could reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

These changes would result in lower employment opportunities within the South Merced area, which might increase the distance traveled by local residents to their place of employment. Traffic congestion would be reduced at major intersections. The visual character of undeveloped land might remain consistent with existing conditions. Little medium-density and no high-density housing developments would take place. Impacts on schools, public services and facilities, and utilities would be less than for the South Merced Specific Plan land-use concept.

The "No-Project" Alternative is the environmentally superior alternative and is the preferred alternative, compared to Alternative 2 (see Table ES-1).

B. ALTERNATIVE 2 – LOW-DENSITY RESIDENTIAL DEVELOPMENT

The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making

Alternative 2 would reduce the amount of acreage designated for Commercial Office (from 13 to 3 acres), Residential Medium Density (from 89 to 28 acres), Regional Commercial (from 41 to none) High Density Residential (from 117 to none), and Industrial (from 351 to 273). At the same time, it would increase acreage available for Neighborhood Commercial (from 20 to 45 acres) and Residential Low Density designations (from 989 to 1,266 acres). These changes would result in lower employment opportunities within the South Merced area, which might increase the distance traveled by local residents to their place of employment. Traffic congestion would be reduced at major intersections. The visual character of undeveloped land might remain consistent with existing conditions. Little medium-density and no high-density housing develop-

ments would take place. Impacts on schools, public services and facilities, and utilities would be less than for the South Merced Specific Plan land-use concept.

The reduced density project alternative would reduce the density of development, thereby reducing the traffic and air quality impacts through reduced motor vehicle trips being generated by the project.

Comparing the significant effects of the proposed project to Alternative 2, anticipated impacts to traffic and air quality would be reduced, given the overall reduction in scale of the project. Although less than the impacts from the Specific Plan, the traffic increase would still require traffic improvements. The vehicle emissions would still surpass the threshold set by the SJVAPCD and would still be considered a significant air quality impact, though to a lesser degree than the proposed project. Although the reduction in air quality and traffic impacts from the Specific Plan would be reduced, overall, continued development in South Merced at a lower density would require additional land for the city to accommodate the projected population anticipated in the General Plan. Developing at a lower density would generate an increase, in motor vehicle trips, over development at the proposed density, negating any short-term air quality improvement (see Table ES-1).

If the overall scope of the project is reduced in this way, it will not be possible to develop the project as proposed. This would fail to achieve one of the primary objectives of the project from the city's perspective and would achieve something less than the property's full development potential. With respect to the City's objectives of developing the project at higher densities than currently planned, requiring less dense development would be in direct conflict with the city's objective. Less dense development also would reduce the ability to develop more pedestrian-friendly neighborhoods and transit-oriented development. Furthermore, since this reduced project alternative would not, overall, avoid or substantially reduce environmental impacts when compared to the project as proposed, and since it would be much less effective in achieving the project objectives, it is not being pursued.

TABLE ES-1

Comparison of Environmental Impacts for No Project (Alternative 1) and Low-Density Residential Development (Alternative 2)

Impact	Alternative 1	Alternative 2	Comments
Air Quality	-	-	Although fewer dwelling units proposed under Alternative 2 results in approximately half the traffic because of the mix of land uses and inclusion of alternative forms of transportation.
Biological Resources	-	0	Same acreage of biological resources impacted under each Alternative and the project.
Cultural Resources	-	0	Same acreage of cultural resources impacted under each Alternative and the project.
Hazards and Hazardous Materials	-	-	Not a significant impact under any Alternative or the project.
Land Use and Planning	0	+	Project would proceed under the City of Merced General Plan, with corresponding unresolved issues in land use conflicts such as residential uses in sensitive airport influence zones and lack of commercial services for residents.

TABLE ES-1 (Continued)

Comparison of Environmental Impacts for No Project (Alternative 1) and Low-Density Residential Development (Alternative 2)

Impact	Alternative 1	Alternative 2	Comments
Noise	-	0	Although fewer dwelling units in Alternative 2, the amount of traffic on roads is assumed to exceed threshold resulting in same noise impacts from traffic.
Transportation/Traffic	0	-	Under Alternative 1 – no project, the project would proceed under the existing General Plan. Greater regional commercial land base would create more traffic in sensitive areas.
Public Services and Facilities, Utilities, and Recreation	-	-	Fewer dwelling units in Alternative 2 correspond to lower population; less demand for services.
Agricultural Resources	-	0	Same acreage of agricultural resources impacted as the project.
Hydrology/Water Quality	-	-	Same acreage impacted under each Alternative as the project.
Aesthetics	-	-	Lower intensity of Alternative 2 would likely have fewer structures built, but the project would still involve development of urban uses. No aesthetic viewsheds would be affected and the existing visual character would remain similar to current conditions.

+ = Impacts are more adverse, compared to the project, as proposed.
- = Impacts are less adverse, compared to the project, as proposed.
0 = Impacts are about the same as the project, as proposed.

ES.5 SUMMARY OF SIGNIFICANT ENVIRONMENTAL EFFECTS AND MITIGATION

Tables ES-2 through ES-5 itemize potential impacts for Categories 1 through 5, respectively.

TABLE ES-2

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact AQ-1: See Chapter IV, Section A	**Mitigation Measure AQ-1:** Fugitive dust emissions will be reduced at large sites or projects that may adversely impact the air quality at sensitive receptors by requiring enhanced and additional fugitive dust control measures recommended and enforced by the SJVAPCD. In those cases, the developer of subsequent projects shall provide written construction specifications to the grading contractors and shall ensure that the following techniques where recommended are applied to grading operations. Enhanced or additional control measures may include, but are not limited to the following: • Limit traffic speeds on unpaved roads to 15 mph; • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent; • Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site; • Install wind breaks at windward side(s) of construction areas; • Suspend excavation and grading activity when winds exceed 20 mph; and • Limit area subject to excavation, grading, and other construction activity at any one time.	Less than Significant
Impact AQ-2: ***Construction Emissions.*** See Chapter IV, Section A	**Mitigation Measure AQ-2:** NO_X and ROG construction equipment emissions from construction sites will be reduced by complying with construction vehicle air pollutant control strategies developed, recommended and enforced by the SJVAPCD. Contractors will be required to list the recommended emission reducing strategies on construction contracts or other forms acceptable to the SJVAPCD. Such strategies may include the following requirements or measures shown to be equally effective: • Use of alternative fueled or catalyst-equipped diesel construction equipment; • Minimize idling time (e.g., 10 minute maximum); (cont'd)	Less than Significant

TABLE ES-2 (Continued)

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact AQ-2: (cont'd)	(cont'd) • Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use; • 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 concentrations (this may include ceasing construction activity during the peak-hour of vehicular traffic on adjacent roadways); and • Implement activity management (e.g., rescheduling activities to reduce short-term impacts).	
Impact BIO-1: ***Sensitive Biological Lands.*** Implementation of the Specific Plan could result in the permanent and/or temporary loss of substantial amounts (defined as 10 acres or more by the City of Merced) of wetlands, permanent marshes, riparian habitats, vernal pools, and oak woodlands.	**Mitigation Measure BIO-1:** ***Sensitive Biological Lands.*** Focused surveys, including floristic surveys, targeted wildlife surveys, and CWA 401, 404, and California Fish and Game Code 1600 (*et seq.*) jurisdictional delineations shall be required prior to initiating any development or other site-disturbance activity to avoid and minimize adverse impacts to sensitive biological lands (e.g., vernal pools, riparian areas, and wildlife corridors) to the maximum extent practicable pursuant to Merced Vision 2015 General Plan Policy OS-1.1. • If present and practicable, impacts to sensitive biological lands will be avoided with the use of a minimum setback to maintain the biological and hydrological (when applicable) integrity of sensitive biological lands. • If avoidance is not practicable, subsequent projects will be obligated to minimize and compensate for adverse impacts through consultation with the appropriate responsible local, state, and federal agencies (e.g., City Planning Department, RWQCB, CDFG, USFWS, and USACE) to secure all obligatory discretionary permits and development authorization. • At a minimum, development activities that result in loss of sensitive biological lands will be compensated for on a one-to-one (1:1) impact to mitigation ratio to ensure a no-net-loss standard within Merced County.	Less than Significant

TABLE ES-2 (Continued)

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact BIO-2: ***Special-Status Species.*** Implementation of the Specific Plan could have an adverse effect on special-status species (e.g., mortality, destruction, etc.) and result in the loss of breeding, foraging, dispersal, and refuge habitats as a result of development and ground disturbing activities.	**Mitigation BIO-2**: ***Special-Status Species.*** Projects will be required to include the following measures to assure no substantial adverse effect on local, state, or federally protected plant or wildlife species result form the Project. Developers will also be required to include focused surveys for the presence or absence of state and federal ESA-protected species and the habitats upon which they depend. • If present and practicable, impacts to state and federal ESA protected species, and their habitats will be avoided by implementing environmental awareness programs for project staff, the designation of environmental inspectors/monitors who will have the authority to redirect non-emergency activities that might harm state and federally-protected species, limiting development activities to prescribed areas, and avoiding introduction of non-native species. • If avoidance of ESA or other special-status species is not practicable, the developer will be obligated to minimize and compensate for adverse impacts by securing all obligatory discretionary permits and obtain all relevant development authorizations through appropriate responsible state and federal agencies (e.g., CDFG, USFWS, or NMFS) to secure. • Specific mitigation measures are suggested below for burrowing owl, vernal pool branchiopods, and special-status plants: ***Burrowing Owl and Swainson's Hawk*** – Projects will conduct pre-development surveys to following CDFG guidelines. If no active avian nests are identified on or within 250 feet of the development site, no further mitigation would be required. – If active nests are located, development would be delayed within the buffer zone until the young have fledged or appropriate mitigation measures have been developed in consultation with appropriate resource agencies. (cont'd)	Less than Significant

TABLE ES-2 (Continued)

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact BIO-2: (cont'd)	(cont'd) – In the case of burrowing owls, burrows would be avoided or passive exclusion and relocation techniques would be implemented following CDFG guidance to the maximum extent practicable. – In the case of Swainson's hawks, informal consultations with CDFG will be initiated to determine appropriate actions necessary to protect the nest site until the young have fledged and begin foraging independently. ***Vernal Pool Branchiopods*** – Field surveys for vernal pool branchiopods will be conducted following USFWS "Interim Survey Guidelines for Recovery Permits for Vernal Pool Branchiopods" to the maximum extent practicable in consultation with all applicable agencies (e.g., USFWS and CDFG). – If present and practicable, impacts to vernal pool species and habitats will be avoided with the use of a minimum setback. – If avoidance is not practicable, developer will be obligated to minimize and compensate for adverse impacts through consultation with the appropriate responsible local, state, and federal agencies (e.g., City Planning Department, CDFG, USFWS) to secure all obligatory discretionary permits and development authorization. Developers shall submit to the City Building Division notification of the determination from the USACE regarding fill of the site and CDFG / USFWS for take of listed species prior to issuance of grading permits. – Activities that result in loss of vernal pool habitats will at a minimum be compensated for on a 1:1 impact to mitigation ratio to ensure a no-net-loss standard within Merced County. (cont'd)	

TABLE ES-2 (Continued)

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact BIO-2: (cont'd)	(cont'd) ***Special-Status Plant Species*** – Pre-development surveys will be performed to detect the presence of special-status plant species within the project areas. – If present and practicable, impacts to special-status plant species and habitats will be avoided with the use of a minimum setback. – If avoidance is not practicable, applicants will be obligated to minimize and compensate for adverse impacts through consultation with the appropriate responsible local, state, and federal agencies (e.g., City Planning Department, CDFG, and USFWS). – In areas subject to development, special-status perennial plants will be salvaged for transplantation following established protocols. – For special-status annual plants, seeds will be collected from populations prior to the loss of the populations due to development. – Salvage plants and collected seeds will be planted and dispersed within suitable habitat not currently occupied by the affected plant species, to avoid impacts on the genetic composition of existing populations.	
Impact BIO-3: ***Migratory Bird Treaty Act and California Fish and Game Code 3500 (et seq.) Protected Species.*** Implementation of the Specific Plan could result in the direct loss of nesting habitats or temporarily deter residential and migratory avian species and raptors that have the potential to breed and forage within the study area.	**Mitigation BIO-3:** ***Migratory Bird Treaty Act and California Fish and Game Code 3500 (et seq.) Protected Species.*** Projects will be required to include the following measures to assure no substantial adverse effect on any nesting habitats or foraging areas for residential and migratory species. • A qualified biologist will conduct a nesting bird and raptor survey prior to any vegetation-clearing activities. Surveys will occur within 72 hours prior to initiation of physical ground disturbance activities to document that no occupied passerines and/or raptor nests would be impacted. (cont'd)	Less than Significant

TABLE ES-2 (Continued)

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact BIO-3: (cont'd)	(cont'd) • Vegetation clearing activities will be completed prior to the onset of the avian breeding season beginning in March, to the maximum extent practicable, in order to greatly reduce or avoid adverse impacts to avian species. Clearing of vegetation prior to development activities would deter the majority of individuals from selecting nesting or breeding sites within the development areas. • Upon detection of an active nest within the project site or on immediately adjacent lands, a buffer zone from occupied nests will be maintained during physical ground disturbing activities. Once nesting has been determined to cease, the buffer may be removed.	
Impact BIO-4: ***Creeks, Ditches, and Drainages***. Implementation of the Specific Plan could result in development or ground disturbing activities without adequate preservation and enhancement of creeks in their natural state throughout the study area.	**Mitigation BIO-4:** ***Creeks, Ditches, and Drainages***. Projects will be required to avoid, minimize, and/or compensate for adverse impacts to Merced's important natural urban creek system. • If present and practicable, impacts to Merced's important natural urban creek system will be avoided. • If avoidance is not practicable, subsequent projects will be obligated to minimize and compensate for adverse impacts through consultation with the appropriate responsible local, state, and federal agencies (e.g., City Planning Department, RWQCB, CDFG, and USACE) to secure all obligatory discretionary permits and development authorization. Local development authorization will obligate subsequent projects to: (1) avoid fencing and piping creeks to the maximum extent practicable, (2) conserve major creeks, riparian habitat, substantial woodlands or stands of trees and knolls as open space amenities when practicable, (3) engineer naturalized (cont'd)	Less than Significant

TABLE ES-2 (Continued)

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact BIO-4: (cont'd)	(cont'd) channelization improvements and pursue alternatives to concrete channeling of existing creeks and streams as part of any flood control project to support more natural flood control methods, and (4) provide a minimum 50-foot dedication from the centerline (or 25 feet from the crown, whichever is greater) of all affected creeks.	
Impact CUL-1 (Archeological Resources) The development of the South Merced urban development area has the potential to disturb or destroy archaeological resources.	**Mitigation CUL-1 (Archeological)** For archaeological resources valuable primarily for their data potential, implementation of mitigation measure CUL-1will reduce potential impacts to a less-than-significant level. The treatment of archaeological resources is found in PRC §21083.2. If a project will cause a significant impact to an archaeological resource, the lead agency may require protection through conservation easements, capping or covering the site, planning to avoid impacts, or creating greenspace or parks. Most commonly, however, significant impacts to archaeological resources are mitigated through excavation or data recovery.	Less than Significant
Impact CUL-2 (Human Remains) The development of the South Merced urban development area has the potential to result in disturbance or destruction of human remains.	**Mitigation CUL-2 (Human Remains)** In the event the discovery of a burial, human bone, or suspected human bone, all excavation or grading in the vicinity of the find will halt immediately and the area of the find will be protected. The developer shall immediately notify the Merced County Coroner of the find and comply with the provisions of PRC §5097 with respect to Native American involvement, burial treatment, and re-interment. (Applicability—project level).	Less than Significant
Impact CUL-3 (Paleontological Resources) The development of the South Merced urban development area has the potential to disturb or destroy paleontological resources.	**Mitigation CUL-3** When applicable, prior to any construction in the South Merced planning area, the project applicant will be required to inform construction personnel of the potential for encountering significant paleontological resources. All construction personnel will be informed of the need to stop work in the vicinity of a (cont'd)	Less than Significant

TABLE ES-2 (Continued)

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact CUL-3 (cont'd)	**(cont'd)** potential discovery until a qualified paleontologist has been provided the opportunity to assess the significance of the find and implement appropriate measures to protect or scientifically remove the find. Construction personnel also will be informed of the requirement that unauthorized collection of fossil resources is prohibited	
Impact CUL-4 (Illicit Collection) The development of the South Merced urban development area has the potential to result in disturbance or destruction of potential cultural resources through incidental activity and increased accessibility, which could result in vandalism or illicit collection. **Impact CUL-5 (Historic Structures)** To ascertain the presence and types of historic structures in the project area, URS completed a records search at the CCIC. The records search identified 10 previously conducted cultural resource surveys and 3 previously recorded cultural resources within the South Merced SP project area. The surveys were conducted between 1975 through 2000, and the total survey coverage for the 10 surveys was less-than 25-percent of the total project area. Since a cultural resource survey of the entire project area has never occurred, the development of the South Merced urban development has the potential to impact historic buildings, structures districts, and objects through unanticipated discovery, demolition, or alteration of physical characteristics during subsequent project development.	**Mitigation CUL-4a** Before awarding construction or grading permits for individual projects within the South Merced planning area, the project Applicant will be required to retain a qualified architectural historian to conduct an architectural survey of historic sites to determine eligibility, and level of integrity of the built environment resources. The architectural historian will also reassess the integrity and eligibility for listing in the CRHR of any built environment cultural resources that have been identified previously in the project area. Built environment cultural resources that appear to be 45-years old or older will be recorded through the appropriate Department of Parks and Recreation (DPR) 523 series form and submitted to appropriate agencies and information repositories. **Mitigation CUL-4b** Before any construction in the South Merced planning area, the project Applicant shall retain a qualified architectural historian and other appropriate personnel to develop mitigation measures for any impact to a significant built environment resource affected by the project. This includes: • Avoiding or minimizing the impact to a historic resource through project redesign or not taking certain actions of the proposed project; • Following the Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings); (cont'd)	Less than Significant

TABLE ES-2 (Continued)

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
	(cont'd) • Preparation of HABS/HAER/Historic American Landscape Survey (HALS) Level 1-3 documentation; • Preparation and execution of an Historic Structures Report (as described in the National Parks Service Preservation Brief 43: The Preparation and Use of Historic Structures Report [National Park Service, 2004]); • Preparation and execution of a Built Environment Treatment and Construction Monitoring Plan (if applicable) for Direct and Indirect Impacts; • Public notice of availability of significant buildings and structures for relocation to alternate sites; • Development of a Historic Context for the Project Area, which would be a planning tool for understanding the larger trends and patterns in history in which the historic resources are understood; • Preparation of oral histories and statements of individuals and groups associated with the historic resources; and • Development of a local history unit for City of Merced elementary schools, which would discuss significant historic themes and patterns associated with the area.	
Impact CUL-6 The development of the South Merced urban development area has the potential to lead to the continual loss and destruction of cultural resources.	**Mitigation CUL-6** Mitigation measures for direct impacts are anticipated to mitigate cumulative impacts to cultural resources to a *less than significant level.*	Less than Significant
Impact NOI-3 Existing residential uses will be located in areas adjacent to major roadways and subject to noise levels that are likely to exceed the City of Merced standard of 65 dBA.	**Mitigation NOI-1** For residential or other sensitive land uses proximate to the arterials and major collector roads which will exceed City noise thresholds per Table IVF-2), noise mitigation may include a combination of building setbacks; the construction of (cont'd)	Less than Significant

TABLE ES-2 (Continued)

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact NOI-3 (cont'd)	(cont'd) noise barriers that may include a berm, wall, or combination of the two; and the siting of buildings to block traffic noise, to provide suitable outdoor living areas with Ldn values no higher than 65 dBA. Concurrent with submittal of an annexation or a tentative subdivision map for land already within the City, the applicant shall provide a project development plan based in part on a sound study that includes noise attenuation features, such as noise barriers, increased setbacks, building layout, floor-plan and architectural design, or a combination thereof. The sound study, prepared by an acoustical engineer, shall specify the features necessary to meet the City's adopted noise level standards (Noise Implementation Action N-1.4.a), and shall be submitted together with the proposed development plan.	
Impact TR-1 Conditions near the SR 99/Childs Avenue interchange will exceed the LOS D minimum. Projected daily traffic volumes on Childs Avenue near the SR 99 freeway exceed the capacity of the planned four-lane arterial. These volumes are indicative of the need to modify the inter-change to provide additional capacity, as noted in the Specific Plan goals and policies.	**Mitigation TR-1** Development in the Specific Plan area will contribute its fair share cost of modifying the SR 99/Childs Avenue interchange. The fair-share amount will be determined through specific traffic studies required at the annexation stage of entitlement. This contribution will be collected by the City and placed in a fund to be used specifically for said improvement.	Less than Significant
Impact TR-4 Traffic conditions on Childs Avenue between Brantley Street and the SR 99 interchange will exceed the LOS D minimum. The Childs Avenue interchange is a major access to the plan area. Even with development of a four lane arterial street, as envisioned in the plan, under the proposed project the year 2030 volume on the portion of (cont'd)	**Mitigation TR-4** Childs Avenue between Brantley Street and the SR 99 interchange will have to be widened to a six-lane arterial standard. With this level of improvement, the roadway will operate at LOS C. Alternatively, development of the Henry Street extension across SR 99 to Parsons Avenue or the Gerard Street crossing over SR 99 could reduce the volume of traffic on Childs Avenue to the point that a 6-lane section is not needed.	Less than Significant

TABLE ES-2 (Continued)

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
(cont'd) Childs Avenue between Brantley Street and the inter-change will exceed the LOS D threshold. LOS D conditions will, however, result under the Alternative land use plan.		
Impact TR-5 Traffic conditions on Mission Avenue east of SR 99 will exceed LOS D. Development on the eastern side of the freeway is the primary cause of year 2030 traffic volumes that exceed the capacity of the four-lane roadway that is planned for construction in the near future. A six-lane section will be needed to deliver acceptable conditions on this expressway.	**Mitigation TR-5** Development in the plan area will contribute its fair share to the cost of improving Mission Avenue east of SR 99 to six lanes through the City's Public Facility Finance Fee program.	Less than Significant
Impact TR-6 Traffic conditions at the SR 99/SR 59 interchange will exceed the LOS D minimum. Projected daily traffic volumes on SR 59 near the SR 99 freeway exceed the capacity of the planned four-lane arterial. These volumes are indicative of the need to modify the interchange to provide additional capacity, as noted in the Specific Plan goals and policies.	**Mitigation TR-6** Development in the Specific Plan area will contribute its fair share to the cost of modifying the SR 99/SR 59 interchange to meet minimum level of service standards.	Less than Significant
Impact TR-9 Traffic conditions on G Street from 13th Avenue to Childs Avenue will exceed LOS D. This two-lane segment of G Street can be widened to include either an "urban collector" or four-lanes. Widening to four lanes or use of an "urban collector" with access permitted no closer than every 1/8 mile will be needed to achieve LOS D under the Specific Plan.	**Mitigation TR-9** Widening to four lanes or use of an "urban collector" with access permitted no closer than every 1/8 mile will be needed to achieve LOS D under the Specific Plan. Development in the Specific Plan area will contribute its fair share to the cost of these modifications and associated right-of-way acquisition needs. The City of Merced will monitor the level of service for this road through traffic studies required of development proposals, and make or require the improvement of said roadway when conditions are warranted.	Less than Significant

TABLE ES-2 (Continued)

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact TR-11 Traffic conditions on B Street in the area from 13th Street to Childs Avenue will exceed the LOS D threshold. This portion of B Street will operate at an LOS in excess of the City standard under the Specific Plan. Theoretically, this roadway segment will have to be widened to four lanes to deliver LOS D or better conditions.	**Mitigation TR-11** Widen this segment to four lanes using a special cross-section to fit the improvements within the 80-foot right of way that exists. Development in the Specific Plan area will contribute its fair share to the cost of these modifications and associated right-of-way acquisition needs. The City of Merced will monitor the level of service for this road through traffic studies required of development proposals, and make or require the improvement of said roadway when conditions are warranted.	Less than Significant
Impact TR-12 Intersections in and near the plan area will meet warrants for signalization. Comparison of projected daily traffic volumes with Caltrans warrants for signalization suggests that in addition to the locations noted in the circulation plan, the following intersections are likely to require signalization by the year 2030. • Childs Avenue / M Street • East 13th Street / G Street • East 13th Street / B Street • East 15th Street / S Street • East 15th Street / B Street	**Mitigation TR-12** Development in the plan area will contribute its fair share to the cost of traffic signals at the locations identified in the circulation plan and at the following intersections: • Childs Avenue / M Street • East 13th Street / G Street • East 13th Street / B Street • East 15th Street / S Street • East 15th Street / B Street	Less than Significant
Impact PS-2 Implementation of the Specific Plan may conflict with adopted public service goals for the City relative to police services.	**Mitigation PS-2** Additional officers will be hired as required, and all development within the Specific Plan area will participate in a Community Facilities District to fund a portion of these additional costs. As a condition of development, applicants pursuant to the Specific Plan will be required to pay this fee at the time building permits are issued.	Less than Significant

TABLE ES-2 (Continued)

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact PS-3 The Specific Plan may create additional utility service demands in excess of projected supply relative to water.	**Mitigation PS-3** Implementation of General Plan Policies P-1.1, P-1.2, P-1.3, P-2.1.e, P-3.1, and P-3.2 and SP S-4.2.a will assist in accommodating the additional water demand. The City will construct wells as needed using funds provided for through developer payment of Public Facility Finance Payments.	Less than Significant
Impact PS-7 The Specific Plan may fail to provide adequate sites for the development of needed public service facilities relative to schools.	**Mitigation PS-7** Mitigation of the need for school facilities in land-use approvals is limited by the California Legislature to the payment of mitigation fees under Government Code Sections 65995, 65995.5 or 65995.7, as applicable, and the payment of such fees is deemed *full and complete mitigation* of the impacts of any local agency action involving the planning, use, or development of real property.	Less than Significant
Impact PS-11 Implementation of the Specific Plan will fail to provide adequate sites for the development of needed public recreation facilities, such as parks and playgrounds.	**Mitigation PS-11** Provisions will be made for locating and funding the construction of recreational facilities within the Specific Plan area to meet the City's goal of 5 acres per thousand residents. The City will have final approval of the design and location of proposed recreational areas. Payment of public facility fees will be required from developers to compensate the City for impacts on recreational uses. As a condition of development, applicants pursuant to the Specific Plan will be required to pay this fee at the time building permits are issued.	Less than Significant
Impact HYD-1 The project will result in possible reduction of groundwater supply as a result of additional demand for drinking water, which is currently retrieved from the groundwater supply by Merced City Water Utility.	**Mitigation HYD-1** According to the *Merced Vision 2015 General Plan*, the *2001 Merced Water Supply Plan* (CH2M HILL, Updated 2001) has been established to prevent the decline of groundwater supplies through the year 2030 through groundwater recharge facilities. The GP EIR (City of Merced, 1997b) maintains that the water conservation policy of the City should be reviewed periodically to determine the need, appropriateness, and feasibility of implementing the conservation practices suggested in the *Merced Water Supply Plan*.	Less than Significant

TABLE ES-2 (Continued)

Summary of Potential Impacts that Can Be Mitigated – Category 1

Items in Category 1 represent potential environmental impacts that can be fully mitigated, as described in the California Environmental Quality Act (CEQA) Section 21081(a)(1).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact HYD-2 Future development within the project area will alter drainage patterns in specific sites and increase the rate or amount of surface runoff, which may result in substantial siltation or erosion on or off site and increase the amount of urban pollutants in stormwater runoff, which could affect water quality.	**Mitigation HYD-2** As part of the National Pollutant Discharge Elimination System (NPDES) permit, the development within the project area will be required to include Best Management Practices (BMPs), such as vegetated swales and filter strips, storm drain system stenciling at drain inlets, and engineered treatment facilities to prevent pollutants from degrading the quality of receiving waters. Most of the project area consists of very mild slopes, resulting in slow runoff, so the potential for substantial erosion or siltation on site is not significant. To decrease the volume of runoff, the specific development projects should be required to maximize infiltration of runoff and incorporate measures into the project design that will minimize the increase in runoff volume, compared to existing conditions. Possible measures include, but are not limited to: • Site design layout to reduce and disconnect impervious surfaces; • Tree boxes to capture and infiltrate street runoff; • Vegetated swales, buffers, and strips; • Preservation of native vegetation; • Directing downspouts to rain gardens; and • Utilizing pervious paving. To prevent degradation of downstream surface water, any construction associated with the realignment of canals and laterals should occur during the dry season.	Less than Significant
Impact HYD-4 Development within the project area may result in stormwater runoff during construction, which may substantially degrade water quality	**Mitigation HYD-4** See Chapter IV, Section K, Hydrology, 3 (3)	Less than Significant

CDFG = California Department of Fish and Game
CWA = California Water Act
ESA = Endangered Species Act
NMFS = National Marine Fisheries Service
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers

TABLE ES-3

Summary of Potential Impacts that are the Responsibility of Another Agency – Category 2

Items in Category 2 represent potential environmental impacts for which mitigation is the responsibility of another jurisdiction, as described in CEQA Section 21081(a)(2).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Highway 99/Childs Interchange	N/A	N/A
Impact TR-7 Traffic conditions on SR 59 from SR 99 to Gerard Avenue will exceed LOS D. SR 59 links the project area with SR 99 and with downtown Merced. While the Specific Plan's circulation plan envisions a four-lane arterial street, forecast volumes in the area north of Gerard Avenue are indicative of conditions in excess of LOS D at four lanes	**Mitigation TR-7** Work with Caltrans and Merced County Association of Governments to widen SR 59 to six lanes from SR 99 to Gerard Avenue. Projects within the planning area will be required to contribute a fair share to the cost of modifying this highway.	N/A

TABLE ES-4

Summary of Potential Impacts that Cannot Be Fully Mitigated – Category 3

Items in this category represent potential impacts that may require mitigation measures, but those measures cannot reduce impacts to a level below significance, or the mitigation measures or alternatives are infeasible due to specific economic, legal, social, technological or other considerations, as described in CEQA Section 21081(a)(3).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact AQ-3: Operational Emissions See Chapter IV, Section A	**Mitigation Measure AQ-3:** Criteria pollutant emissions will be reduced by encouraging projects within the South Merced Specific Plan to include energy efficient features. Mitigation Measure AQ-3 applies to area sources within the Specific Plan area. Project applicants must, prior to review of the Project by the City Planning Commission, select those measures from the list below that will be incorporated in their development project, and describe to the City how and when they will be implemented. The developer shall ensure implementation and full compliance of those mitigation measures: • Install EPA Energy Star (high reflectance) roofing materials to reduce building heat absorption and summer energy costs; • Position structures in a predominantly North-South face and plant low-emitting shade tree and bush species near structures in such an arrangement to shade and cool structures during warmer seasons yet allow for solar heating and wind breaks during cooler months; • Use reflective street, parking lot, and driveway paving materials, such as Portland concrete, or apply reflective coatings; • Provide grass paving or reflective surface for unshaded parking lot areas, driveways, or fire lanes that reduce standard asphalt paving by 10% or more; • Landscape with native drought-resistant species (plants, trees, and bushes) to reduce the demand for gas-powered landscape maintenance equipment; (cont'd)	Significant and Unavoidable

TABLE ES-4 (Continued)

Summary of Potential Impacts that Cannot Be Fully Mitigated – Category 3

Items in this category represent potential impacts that may require mitigation measures, but those measures cannot reduce impacts to a level below significance, or the mitigation measures or alternatives are infeasible due to specific economic, legal, social, technological or other considerations, as described in CEQA Section 21081(a)(3).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact AQ-3: (cont'd)	(cont'd) • Provide heating systems powered by electricity, natural gas, or propane to serve as the primary heating source; • If wood fuel will be used to heat residential units, only USEPA-Certified Phase II wood-burning stoves will be installed; • Incorporate passive solar space heating designs and solar water heaters into residential and commercial units; • Install low NO_X, energy-efficient heating and other appliances, such as water heaters, cooking equipment, refrigerators, furnaces, and boiler units; • Install a gas outlet for use with outdoor cooking appliances, such as a gas barbecue. Install a gas outlet in any proposed fireplaces, including outdoor recreational fireplaces or pits; • Electrical outlets should be installed on the exterior walls of all residential and commercial buildings to promote the use of electric or battery-operated yard and landscaping equipment; • Prohibit gas-powered landscape maintenance equipment within the development; and • Require that landscape maintenance companies use battery-powered or electric equipment.	

TABLE ES-4 (Continued)

Summary of Potential Impacts that Cannot Be Fully Mitigated – Category 3

Items in this category represent potential impacts that may require mitigation measures, but those measures cannot reduce impacts to a level below significance, or the mitigation measures or alternatives are infeasible due to specific economic, legal, social, technological or other considerations, as described in CEQA Section 21081(a)(3).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact TR-2 Traffic conditions on East 15th Street between D Street and B Street will exceed the LOS D minimum. 15th Street links the project area with the downtown G Street corridor. Under the Specific Plan, the year 2030 volume on the portion of East 15th Street between the D Street railroad crossing and B Street will exceed the LOS D threshold for two-lane urban collector streets (i.e., two lanes plus center turn lane). Recent development of parking lots and buildings in this area make it difficult to widen the roadway to the four-lanes that are needed. This is considered a significant and unavoidable impact. Mitigation measures are provided to help lessen the impact.	**Mitigation TR-2** Modify 15th Street to include an "urban collector" between "B" Street and SR 59, and seek to restrict access to this roadway between "B" Street and "D" Street. Development in the Specific Plan area will contribute its fair share to the cost of these modifications and associated right-of-way acquisition needs. The City of Merced will monitor the level of service for this road through traffic studies required of development proposals, and make or require the improvement of said roadway when conditions are warranted.	Significant
Impact TR-3 Traffic conditions on East 13th Street between G Street and SR 59 will exceed the LOS D minimum. 13th Street links the project area with the SR 99 ramps at SR 59 and at G Street. Under the proposed project, the year 2030 volume on the portion of East 15th Street between the "G" Street and SR 59 will exceed the LOS D threshold for a two-lane urban collector street (i.e., two lanes plus center turn lane). This section of roadway passes beneath an SR 99 overcrossing and the right of way occupies the lower embankment of SR 99. These features are likely to preclude widening of the roadway to the four-lanes that are needed. This is considered a significant and unavoidable impact. Mitigation measures are provided to help lessen the impact.	**Mitigation TR-3** Modify 13th Street to include an "urban collector" between "B" Street and SR 59, and seek to restrict access to this roadway between "G" Street and SR 59. Development in the Specific Plan area will contribute its fair share to the cost of these modifications and associated right-of-way acquisition needs. The City of Merced will monitor the level of service for this road through traffic studies required of development proposals, and make or require the improvement of said roadway when conditions are warranted.	Significant

TABLE ES-4 (Continued)

Summary of Potential Impacts that Cannot Be Fully Mitigated – Category 3

Items in this category represent potential impacts that may require mitigation measures, but those measures cannot reduce impacts to a level below significance, or the mitigation measures or alternatives are infeasible due to specific economic, legal, social, technological or other considerations, as described in CEQA Section 21081(a)(3).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact TR-8 Traffic conditions on G Street north of 13th Avenue will exceed LOS D. G Street links the project area with downtown Merced. This four-lane arterial street is projected to operate at LOS E to LOS F under the Specific Plan.	**Mitigation TR-8** G Street north of 13th Street needs to be widened to a 6-lane arterial to improve the LOS. However, it is unlikely that this level of improvement can be accommodated, given right-of-way constraints, especially in the area of the SR 99 ramps. Thus, this impact is considered to be significant and unavoidable.	Significant
Impact TR-10 Traffic conditions on D Street across the UPRR will exceed the LOS D standard under the proposed project. This roadway links the project area with 16th Street. Widening to a four-lane section will be needed to deliver LOS D or better conditions under the Specific Plan.	**Mitigation TR-10** The City will submit a request to the Public Utilities Commission seeking safety related improvements for the "D" Street roadway crossing of the Southern Pacific Railroad tracks, east of "G" Street and west of the 16th Street southbound on-ramps to SR 99, and will present the findings of the City concerning the need to increase capacity at said roadway to determine the options available to the City. Widening the existing crossing on D Street across the UPRR may not be likely to be approved by the railroad or the Public Utilities commission (PUC). Thus, this impact is considered significant and unavoidable.	Significant
Impact AG-1 Implementation of the Specific Plan will not result in the conversion of additional prime agricultural land to non-agricultural uses that were not previously identified in the *Merced Vision 2015 General Plan.* **Impact AG-2** Implementation of the Specific Plan will impair the productivity of prime agricultural land; however, this was identified in the Merced Vision 2015 GP EIR, and a (cont'd)	**Mitigation Measure AG-1** Several goals and policies identified in the *Merced Vision 2015 General Plan*, as discussed in 1G above, will be incorporated into the Specific Plan to further minimize impacts on agricultural resources. With the incorporation of these policies and the Statement of Overriding Considerations adopted in conjunction with the approval of the Merced Vision 2015 GP EIR, no additional mitigation measures are required.	Less than Significant

TABLE ES-4 (Continued)

Summary of Potential Impacts that Cannot Be Fully Mitigated – Category 3

Items in this category represent potential impacts that may require mitigation measures, but those measures cannot reduce impacts to a level below significance, or the mitigation measures or alternatives are infeasible due to specific economic, legal, social, technological or other considerations, as described in CEQA Section 21081(a)(3).

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact AG-2 (cont'd) Statement of Overriding Considerations was adopted for this impact. The proposed Specific Plan will not impact any additional prime agricultural lands that were identified in the GP EIR; therefore, impacts to agricultural resources are considered *less than significant.* **Impact AG-3** Implementation of the Specific Plan will comply with adopted City policies, which include the promotion of compact urban development and the preservation of agricultural resources in identified areas. Specifically, incorporation of GP Policy OS-2.1.c, which "minimize[s] conflict between agricultural and urban uses by requiring buffers, such as landscape areas, roadways or creeks to separate these uses," will be implemented through the use of Mission Avenue, a 128-foot right of way for a future arterial street, as a buffer between residential development in the planning area and agricultural uses to the south. With the incorporation of adopted policies, impacts to agricultural resources are considered *less than significant.*		

TABLE ES-5

Summary of Potential Effects that Have Been Found Not To Be Significant – Category 4

Items in Category 4 represent potential environmental effects that were found not to be significant. Therefore, in accordance with Section 15128 of the CEQA Guidelines, no mitigation measures are required.

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact AQ-4: CO Emissions	None Required	Unknown
Impact AQ-5: HAP Emissions	None Required	Less than Significant
Impact HAZ-1 The Specific Plan would involve the transport or disposal of hazardous materials, which could be accidentally released within one-quarter mile of an existing school or proposed school sites under the Specific Plan. Two schools are located in the South Merced Specific Plan area, Reyes Elementary School and Reyes Preschool. These schools are located at 123 South N Street. The nearest industrial land uses that are proposed under the Specific Plan are over ½ mile southeast of these schools. None of the truck routes that would be serving these industrial land uses are located alongside these schools.	None Required	Less than Significant
Impact HAZ-2 The Specific Plan will involve construction on a hazardous materials site (as identified on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5). • However, development under the Specific Plan will be in compliance with regulations established by the State Department of Health Services and the Merced County HWMP, and policies found in the *Merced Vision 2015 General Plan*, as follows. (cont'd)	None required.	Less than Significant

TABLE ES-5 (Continued)

Summary of Potential Effects that Have Been Found Not To Be Significant – Category 4

Items in Category 4 represent potential environmental effects that were found not to be significant. Therefore, in accordance with Section 15128 of the CEQA Guidelines, no mitigation measures are required.

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact HAZ-2 (cont'd) • Policy S-7.2: Ensure that hazardous materials are cleaned up before a property is developed or redeveloped. **7.2.a:** Request an assessment of the past use of hazardous materials and soils analysis on proposed development sites.		
Impact HAZ-3 The Specific Plan area will be located within an airport land-use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard for people residing or working in the project area. The Specific Plan area is within 2 miles of the Merced Municipal Airport. In an effort to minimize potential hazards associated with the Merced Municipal Airport, the land-use diagram for the Specific Plan proposes low-intensity land uses, such as industrial land uses (as opposed to land uses such as commercial and residential that carry higher population densities) adjacent to the Runway Protection Zone in accordance with the recommendations in the *Merced Vision 2015 General Plan* (p. 11-34) and the *Merced County Airport Land Use Compatibility Plan*. Furthermore, no development is planned for the Runway Protection Zone itself.	None required.	Less than Significant

TABLE ES-5 (Continued)

Summary of Potential Effects that Have Been Found Not To Be Significant – Category 4

Items in Category 4 represent potential environmental effects that were found not to be significant. Therefore, in accordance with Section 15128 of the CEQA Guidelines, no mitigation measures are required.

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact LU-1 The Specific Plan conflicts with land-use designations found in the City of Merced General Plan, but was found to be a less than significant impact.	None required.	Less than Significant
Impact NOI-4 The Noise Element estimates that the existing and future 65 dBA Ldn contours extend about 335 feet from the railroad tracks that traverse the eastern edge of the planning area. There are no residential uses planned for this area and thus, no associated impact to residential uses in this area of the plan. All of the area within this portion of the Specific Plan will be designated for commercial, business park, or industrial uses. Noise thresholds for commercial, business park and industrial are found in Figure 10.6 of the *Merced Vision 2015 General Plan*. The noise thresholds shown in Figure 10.6 and the expected railroad noise do not provide a conflict. The railroad will not supply noise that exceeds any of the accepted limits. Thus, *railroad noise does not represent a significant impact.*	None required.	Less than Significant

TABLE ES-5 (Continued)

Summary of Potential Effects that Have Been Found Not To Be Significant – Category 4

Items in Category 4 represent potential environmental effects that were found not to be significant. Therefore, in accordance with Section 15128 of the CEQA Guidelines, no mitigation measures are required.

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact NOI-5 The General Plan Noise Element indicates that the future (2010) 60 dBA CNEL contour will not extend into the Specific Plan area, and the 55 dBA CNEL contour will extend approximately 200 feet into the far southwestern corner of the area. This portion of the Specific Plan area is within the Runway Protection Zone for the airport, and the Specific Plan designates this area for agricultural uses compatible with this airport-related zone. The nearest designated residential uses in the Specific Plan will be approximately 1,000 feet outside of the 60 dBA CNEL contour. For this reason, *airport noise does not represent a significant impact.*	None required.	Less than Significant
Impact PS-1 Implementation of the Specific Plan may conflict with adopted public service plans and goals for the City of Merced relative to fire protection.	The listed mitigation is actually routine and part of the project by policy or procedure. As such, there is no impact and no need to mitigate.	Less than Significant
Impact PS-4 The Specific Plan may create additional utility service demands in excess of projected supply relative to waste-water collection and disposal. With implementation of GP Policies P-1.1, P-1.2, P-1.3, P-3.2.e, P 4-1.1, and P-4.2, and providing new service capacity to 20 mgd, impacts from the proposed Specific Plan on wastewater facilities are considered *less than significant*.	The listed mitigation is actually routine and part of the project by policy or procedure. As such, there is no impact and no need to mitigate.	Less than Significant

TABLE ES-5 (Continued)

Summary of Potential Effects that Have Been Found Not To Be Significant – Category 4

Items in Category 4 represent potential environmental effects that were found not to be significant. Therefore, in accordance with Section 15128 of the CEQA Guidelines, no mitigation measures are required.

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact PS-5 The Specific Plan may create additional utility service demands in excess of the projected supply relative to storm water drainage and flood control.	**Mitigation PS-5** With implementation of GP Policies P-1.1, P-1.2, P-1.3, P-5.1, and P-5.2 and SP Policy I-1.1, impacts associated with increased storm water discharges are considered *less than significant*.	Less than Significant
Impact PS-6 The Specific Plan may create additional utility service demands in excess of projected supply relative to solid waste.	**Mitigation PS-6** With implementation of GP Policies P-1.2, P-1.3, P-6.1 and P-6.2, the impact from increased solid waste generation will be considered a *less than significant impact*.	Less than Significant
Impact PS-8 The Specific Plan may fail to provide adequate sites for the development of needed public service facilities relative to libraries and other cultural facility services.	**Mitigation PS-8** With implementation of GP Policies P-1.1, P-1.3, P-8.1, P-8.2, and P-8.3 and SP Policy OS-1.3, impacts to libraries and cultural services will be considered *less than significant*.	Less than Significant
Impact PS-9 The Specific Plan may conflict with adopted public service goals for the City of Merced or fail to provide adequate sites for the development of needed public service facilities.	**Mitigation PS-9** Through implementation of GP Policies P-8.2.b, P8.3.a, and P-8.3.d and SP Policy OS-1.2 impacts associated with the Specific Plan on hospitals and other health care facilities will be *less than significant.*	Less than Significant
Impact PS-10 The Specific Plan may conflict with adopted utility plans and goals for the City of Merced.	**Mitigation PS-10** With implementation of GP Policies P-1.1, P-1.3.c, and P-8.3.d and SP Policies I-1.1b, I-1.1.c, and I-1.1d, the potential for adverse impacts on utilities resulting from the Specific Plan is considered *less than significant.*	Less than Significant

TABLE ES-5 (Continued)

Summary of Potential Effects that Have Been Found Not To Be Significant – Category 4

Items in Category 4 represent potential environmental effects that were found not to be significant. Therefore, in accordance with Section 15128 of the CEQA Guidelines, no mitigation measures are required.

Significant, Adverse Impact	Mitigation Measures	Significance After Mitigation
Impact HYD-3 Development within the project area will alter drainage patterns in the project area and increase the rate or amount of surface runoff, which may exceed the holding capacity of the stormwater drainage system, resulting in flooding on or off site.	**Mitigation HYD-3** Implementation of Specific Plan policies will minimize effects on hydrology and water quality.	Less than Significant
Impact HYD-5 Development within the project area may expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of Yosemite Lake Dam. However, the dam is over six-miles from the planning area and the City of Merced does have ongoing programs in place to implement flood protection, as discussed in the *Merced Vision 2015 General Plan* (p. 14-51).	**Mitigation HYD-5** Potential for exposure to flooding from a Yosemite Lake dam failure (over 6 miles from planning area) is unlikely in this project area. According to the *Merced Vision 2015 General Plan*, both Castle Dam and a diversion structure that helps to divert more than 1,200 cubic feet of water per second from MID's main canal are present to help reduce the flow to Yosemite Lake. In addition, the Merced Vision 2015 GP EIR states that flood control plans and development policies are in place in the Merced area to minimize potential flood hazard problems. In the event of high water levels in the lake, water will be discharged into canals. Flooding from these canals will be controlled, limiting the exposure of the project area to any damage resulting from dam failure.	Less than Significant
Impact HYD-6 Development in the project area, in conjunction with other development in the region, could increase impervious surface coverage in the surrounding watersheds and increase stormwater runoff, but it would not result in substantial sources of polluted runoff and therefore would not have a substantial adverse effect on receiving water quality.	**Mitigation HYD-6** The City and County of Merced must comply with NPDES permit requirements, and all future projects in the watershed will be subject to NPDES Phase II regulations. These regulations require that source control and nonpoint source BMPs be employed to control potential effects on water quality and that stormwater quality control devices be incorporated into stormwater collection systems to collect sediment and other pollutants.	Les than Significant

A. PROPOSED ACTION

15123. Summary

An EIR shall contain a brief summary of the proposed actions and its consequences. The language of the summary should be as clear and simple as reasonably practical. The summary shall identify: (1) Each significant effect with proposed mitigation measures and alternatives that would reduce or avoid that effect, (2) Areas of controversy known to the Lead Agency including issues raised by agencies and the public; and (3) Issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects.

The City of Merced proposes to adopt a Specific Plan (SP) to revitalize and guide the future development of a 2,052-acre area in the southern portion of the City (see Figure I-1). The South Merced Specific Plan (Specific Plan or SMSP) involves planning for the development of specific land uses in the South Merced area. The project was defined in the adopted South Merced Strategic Plan (Strategic Plan) (City of Merced, 2003).

In April 1997, the City of Merced adopted the *Merced Vision 2015 General Plan* (GP) (City of Merced, 1997). The GP encompasses the entire City of Merced and its sphere of influence and, therefore, also covers the proposed SMSP area. The GP Environmental Impact Report (GP EIR) (City of Merced, 1997) (SCH# 95082050) that was prepared in conjunction with the GP analyzed the potential environmental impacts of the adoption and implementation of the GP, including impacts from land development in portions of the proposed SMSP area.

This South Merced Specific Plan EIR (SMSP EIR) is a program EIR that is tiered from the City's Merced Vision 2015 GP EIR. This SMSP EIR focuses on the differences between land-use designations and policies contained in the proposed Specific Plan and the land-use designations and policies in the City's GP for the SMSP area. It also evaluates whether the changes in land-use designations and policies would result in new significant environmental impacts that were not addressed previously in the GP EIR. The Merced Vision 2015 General Plan EIR (City of Merced, 1997b) is available for review at the City of Merced.

15168. Program EIR

(a) General. A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either:
- (1) Geographically,
- (2) As logical parts in the chain of contemplated actions,
- (3) In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or
- (4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

(b) Advantages. Use of a program EIR can provide the following advantages. The program EIR can:
- (1) Provide an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action
- (2) Ensure consideration of cumulative impacts that might be slighted in a case-by-case analysis,
- (3) Avoid duplicative reconsideration of basic policy considerations,
- (4) Allow the lead agency to consider broad policy alternatives and program wide mitigations measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts, and
- (5) Allow reduction in paperwork.

(c) Use with Later Activities. Subsequent activities in the program must be examined to the light of the program EIR to determine whether an additional environment document must be prepared.

This SMSP EIR is a program EIR that evaluates the environmental impacts of the proposed Specific Plan at a program level. As specific development projects within the SMSP area are proposed for construction, additional environmental review will be conducted that will analyze the project-specific impacts of each development project. That project-level analysis will tier from both the GP EIR and this SMSP EIR and will address those impacts that are not adequately addressed in these two program EIRs.

15152. Tiering

(a) "Tiering" refers to using the analysis of general matters contained in a broader EIR (such as one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project.

(b) Agencies are encouraged to tier the environmental analyses which they prepare for separate but related projects including general plans, zoning changes, and development projects.

B. AREAS OF CONTROVERSY KNOWN TO THE LEAD AGENCY

Through the Notice of Preparation process and general community discussions, the City of Merced is aware of public concerns regarding:

- Agricultural Lands
- Land Use and Planning
- Biology
- Air Quality
- Traffic

The following information is presented in accordance with CEQA Guidelines Section 15124.

C. LOCATION AND BOUNDARIES

The Specific Plan area is located in the southern portion of Merced. The Specific Plan study area comprises 2,052 acres and is bounded on the north by Childs Avenue, by State Route (SR) 99 on the east, by Mission Avenue/Dickenson Ferry Road on the south, and by West Avenue and the Merced Airport on the west. See Figure II-1, Land-Use Concept, and Figure II-2, Topographic Map.

D. PROJECT OBJECTIVES

Section 15124(b) of the CEQA Guidelines indicates that “a clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid decision makers in preparing findings or a statement of overriding considerations, as necessary.” Objectives of the South Merced Specific Plan were derived from both the Merced General Plan, which specifically addresses land use and circulation issues for the South

Merced area (see Table II-1), and the South Merced Strategic Plan, which added eight additional objectives (see Table II-2).

TABLE I-1

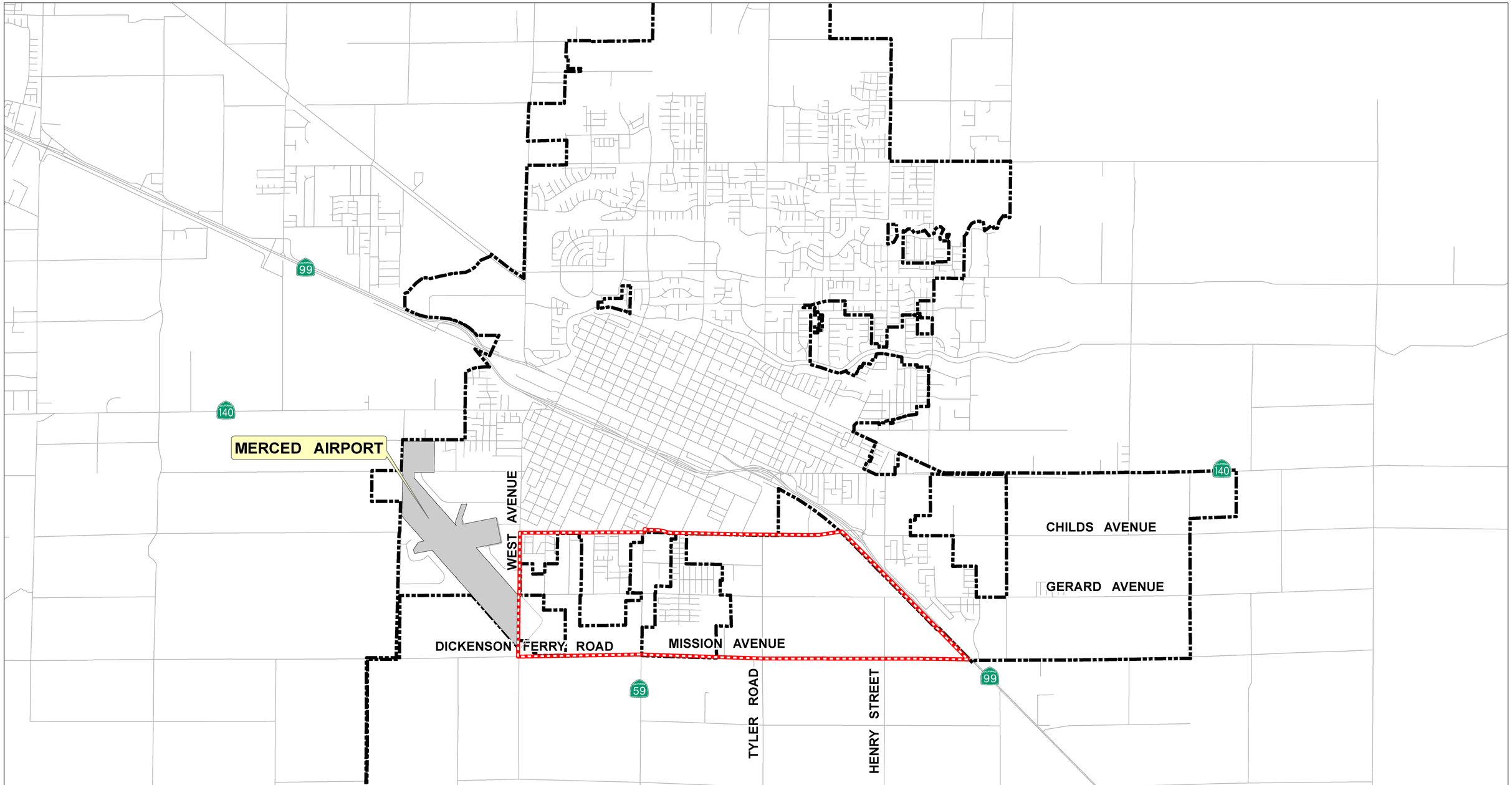
Project Objectives from the *Merced Vision 2015 General Plan (1997)*

1.	Specifically target South Merced as an area that needs more commercial retail and office development (Implementation Action 2.1.e).
2.	Special emphasis should be placed on encouraging the development of neighborhood commercial center(s) in the general vicinity of the South SR 59 corridor to serve the needs of South Merced residents (Implementation Action 2.6.b).
3.	Efforts should be made to encourage the development of a neighborhood commercial center(s) in Southeast Merced in the general area east of Parsons Avenue on Childs Avenue or Gerard Avenue (Implementation Action 2.6.d).
4.	Study options and opportunities for extending the off-street trail (pedestrian and bicycle path) system to and through those portions of the City of Merced south of SR 99 (Implementation Action 2.4.b).
5.	Explore the feasibility of creating some scenic corridors in South Merced through the use of special landscaping standards (Implementation Action 1.3.d).
6.	Develop an off-street bikeway and trail system in South Merced (Implementation Action 3.2.e).
7.	Consider and review the “Urban Villages” concept for feasibility for implementation within South Merced (Specific Plan Guiding Principle 1).

TABLE I-2

Project Objectives from the *South Merced Strategic Plan (2004)*

1.	The Specific Plan will enhance parks, open space, and community facilities by: – Developing a public plaza/gathering place in connection with a new retail center; and – Developing a signature regional park as a draw to South Merced.
2.	Improve circulation and transportation by: – Improving intersections and ramps at SR 99. – Making intersection improvements at Childs Avenue and SR 59 (align, widen, improve visibility and pedestrian safety) to maximize developer interest in pursuing commercial development projects.
3.	Build identity, character, and community design by: – Extending beautification efforts south along Martin Luther King Jr. Way (MLK) from 16th Street to Childs Avenue. – Distributing mixed-use neighborhood village designations along major arterials in South Merced.
4.	Strengthen economic development by: – Rejuvenating the existing neighborhood shopping center on 9th Street between "T" and "S" (near Stephen Leonard Park). – Creating incentives to attract neighborhood-serving retail uses near the Childs Avenue/MLK intersection and east of SR 99. – Improving SR 40 as a "tourist corridor" with visitor-serving retail uses, such as hotels/ motels, restaurants, sporting goods, and specialty retail. – Promoting SR 59 south of Childs Avenue as a major auto service/agricultural service retail corridor.
5.	Alter regulatory framework to facilitate development by: – Completing Specific Plans in the South Merced area as a mechanism for implementing the strategic vision. – Exploring the feasibility of extending the Gateways Redevelopment Project boundaries.
6.	Revitalize and preserve neighborhoods and housing by: – Strengthening outreach to neighbors about existing housing improvement programs through low-interest loans and deferred loans (for those with low-moderate income levels). – Helping make neighborhoods safe and secure—especially around schools, residential areas, parks, and business/industrial parks.
7.	Improve infrastructure and public services by: – Using storm drain channels to create a multi-use green trail network linking parks/open space. – Repairing road surfacing in the following key areas: Childs Avenue, SR 59, Tyler Road, Gerard Avenue, and Parson Avenue (from Gerard Avenue to Childs Avenue).
8.	Improve community programs and organization by: – Providing education/outreach to the community with regard to successful urban planning strategies and development requirements. – Initiating neighborhood organization-sponsored cleanup events for individual neighborhoods.



SOUTH MERCED SPECIFIC PLAN - LOCATION MAP

Figure I-1

Prepared map by permission of the City of Merced. 2005.

URS

LEGEND

ROADS

AIRPORT

SOUTH MERCED SPECIFIC PLAN

CITY BOUNDARY

N W E S

0 2,000 4,000 Feet

1 inch equals 2,000 feet

A. PROJECT CHARACTERISTICS

Section 15124(c) of the CEQA Guidelines requires the Project Description to include: "a general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposal if any and supporting public services facilities." These characteristics are as follows.

The project involves planning for the development of specific land uses to occur in the South Merced area as a result of the preparation of a Specific Plan. The South Merced Specific Plan study area comprises 2,052 acres and is bounded on the north by Childs Avenue, by SR 99 on the east, by Mission Avenue/Dickenson Ferry Road on the south, and by West Avenue and the Merced Airport on the west.

A total of 12 different land-use types are proposed for the Specific Plan area based on the land-use concept developed for the Specific Plan (see Figure II-1). These land use types are as follows:

- Agricultural
- Business Park
- Commercial – General
- Commercial – Neighborhood
- Commercial – Office
- Commercial – Regional
- Industrial
- Open Space / Park and Recreation
- Residential – Low Density
- Residential – Low to Medium Density
- Residential – Village
- School

The environmental analysis is an approximation of the plan and there are slight differences in the assumed figures (dwelling units, land use acreages, etc.).

1. AGRICULTURAL

The Agricultural land-use designation comprises 86 gross acres (65 net acres) of the Specific Plan area. It is in the identified Merced Airport Runway Protection Zone, in the far southwestern corner of the Specific Plan area. It essentially acts as a buffer and compatible use for the potential hazards associated with the airport landing areas.

2. BUSINESS PARK

The Business Park land-use designation comprises 123 gross acres (92 net acres) within the Specific Plan area. The Floor Area Ratio (FAR) is 0.50. The estimated allowable square footage is 2,009,205. As shown on Figure II-1, the Business Park land uses are in several areas: at the intersection of R Street and Gerard Avenue; next to the Commercial General strip along SR 59 and the intersection of West Dickenson Ferry Road; between B Street and Brantley Street; and at the intersection of Mission Avenue and SR 99.

3. COMMERCIAL – GENERAL

The Commercial General land-use designation comprises 123 gross acres (92 net acres) within the Specific Plan area. The FAR is 0.25. The estimated allowable square footage is 1,004,603. As shown on Figure II-1, the Commercial General land-use designation is along the SR 59 corridor.

4. COMMERCIAL – NEIGHBORHOOD

The Commercial Neighborhood land-use designation comprises 20 gross acres (15 net acres) within the Specific Plan area. The FAR is 0.25. The estimated allowable square footage is 163,350. As shown on Figure II-1, the Commercial Neighborhood land-use designation is in two areas: next to the Commercial General strip along SR 59 and the intersection with West Dickenson Ferry Road; and at the village concept, near the intersection of Brantley Street and Mission Avenue.

5. COMMERCIAL – OFFICE

The Commercial Office land-use designation comprises 13 gross acres (10 net acres) within the Specific Plan area. The FAR is 0.25. The estimated allowable square footage is 106,178. As shown on Figure II-1, the Commercial Office land-use designation is in two areas: next to the Commercial General strip along SR 59 and the intersection of West Dickenson Ferry Road; and at the village concept, near the intersection of Brantley Street and Mission Avenue.

6. COMMERCIAL – REGIONAL

The Commercial Regional land-use designation comprises 41 gross acres (31 net acres) within the Specific Plan area. The FAR is 0.25. The estimated allowable square footage is 334,868. As shown on Figure II-1, the Commercial Regional land-use designation is along the southern edge of the Specific Plan area – on the corner of Henry and Mission Avenue.

7. INDUSTRIAL

The Industrial land-use designation comprises 352 gross acres (264 net acres) within the Specific Plan area. The FAR is 0.50. The estimated allowable square footage is 5,749,920. Locating the majority of this land-use type in the southwest portion of the planning area is important because that portion of the planning area is within the Merced Airport Runway Protection Zone, the Approach/Departure Zone, and the Extended Approach/Departure Zone. Each of these zones has

limitations regarding what types and intensities can be used. The other location for Industrial land use is proposed in the southeastern corner of the Plan area, between Henry Street and SR 99.

8. OPEN SPACE/PARK AND RECREATION

The Open Space/Park Recreation land-use designation comprises 74 gross acres (56 net acres) within the Specific Plan area. Open Space/Park use locations are most commonly located near residential areas. The only cemetery use is located at SR 59 and Childs Avenue.

9. RESIDENTIAL–LOW DENSITY

The Residential–Low Density land-use designation comprises 888 gross acres (666 net acres) within the Specific Plan area. The development units per acre are seven. The estimated allowable number of development units is 4,662. Most of this land-use type is found between SR 99 and Tyler Road. Residential–Low Density is also found between West Avenue and SR 99, primarily north of Gerard Avenue.

10. RESIDENTIAL–LOW TO MEDIUM DENSITY

The Residential–Low to Medium Density land-use designation comprises 89 gross acres (67 net acres) within the Specific Plan area. The development units per acre are 12. The estimated allowable number of development units is 801. Most of this land-use type is found in pockets near "village concepts"—at the intersection of M Street and Childs Avenue, flanking the main village concept between Tyler Road and Henry Street, just north of Mission Avenue.

11. VILLAGE RESIDENTIAL

The Village Residential land-use designation comprises 117 gross acres (88 net acres) within the Specific Plan area. The development units per acre are 18. The estimated allowable number of development units is 1,580. Most of this land-use type is found between SR 99 and Tyler Road, just north of Mission Avenue, and constitutes the heart of the "village" development located between Tyler Road and Henry Street, just north of Mission Avenue.

12. SCHOOL

The School land-use designation comprises 29 gross acres (22 net acres) of the Specific Plan area. School sites have specific requirements for their location, and the most common and non-conflicting neighboring land use is Residential. The existing school site is at the intersection of O Street and Childs Avenue. The recently approved school site is located at the intersection of G Street and Mission Avenue.

Table II-1 summarizes land uses by type.

TABLE II-1[1]

Specific Land Uses by Acres, Percent of Total Land Use, Development Unit Floor Area, Floor Area Ratio (acres and square feet)

Draft Land Use	Land Use ID	Acres	Rounded Areas	Percent of Total Land Use	Net Acres (-25% for streets)	Development Unit – Floor Area Factor	Development Units	Floor Area Ratio Acreage	Floor Area Ratio Square Feet
Agricultural	AG	85.58	63	3.1%	47				
School	SCH	29.07	29	1.4%	22				
Commercial – Neighborhood	CN	19.76	20	1.0%	15	0.25		3.75	163,350
Commercial – General	GOM	123.45	123	6.0%	92	0.25		23.06	1,004,603
Commercial – Regional	CR	40.90	41	2.0%	31	0.25		7.69	334,868
Commercial – Office	OFF	13.40	13	0.6%	10	0.25		2.44	105,178
Subtotal		**197.51**	**197**		**148**	**1.00**		**36.94**	**1,608,998**
Residential – Low Density	LDR	988.62	989	48.2%	742	5.00	3,709		
Residential – Medium Density	MDR	89.29	89	4.3%	67	9.00	601		
Residential – Village	VR	117.36	117	5.7%	88	18.00	1,560		
Subtotal		**1,195.26**	**1,203**		**902**	**32.00**	**5,919**		
Open Space – Park Recreation	PRK	69.04	69	3.2%	50				
Industrial	IND	351.99	352	17.2%	276	0.50		132.00	5,749,920
Business Park	BP	123.31	123	6.1%	94	0.50		46.13	2,009,205
Subtotal		475.30	493		356	1.00		173.13	7,759,125
TOTAL		**2,051.87**	**2,051**	**100.0%**	**1,538**	**34.00**	**5,919**	**221.81**	**9,662,153**

[1] The environmental analysis is an approximation of the plan and there are slight differences in the assumed figures (dwelling units, land use acreages, etc.).

According to the *Merced Vision 2015 General Plan*, the South Merced area could benefit especially from improved neighborhood conditions, economic development, more defined land uses, coordinated infrastructure improvements, and expanded services. The *South Merced Strategic Plan* (City of Merced, 2003), adopted by the Merced City Council on January 20, 2004, describes the community's vision for the future of the South Merced area and outlines strategic implementation actions for achieving that vision. That Strategic Plan serves as the fundamental policy basis for the South Merced Specific Plan.

Given the project's location in the City, the following key environmental characteristics apply.

- The San Joaquin Valley, where the Specific Plan area is located, exceeds the federal and state standards for ozone and particulate matter less than or equal to 10 microns (PM_{10}) in aerodynamic diameter.
- Airport hazards may exist, given the Specific Plan area's proximity to the Merced Municipal Airport.
- The eastern portion of the Specific Plan area consists largely of land that is currently undeveloped or in agricultural use.
- The Specific Plan area contains unsafe intersections/roadways as a result of their overall design and/or lack of signalization, such as the intersection of Childs Avenue and Martin Luther King, Jr. Way (MLK).

Specific policies contained in the South Merced Specific Plan are shown in Table II-2.

TABLE II-2

Specific Policies in the South Merced Specific Plan

Goal	Policy	Implementing Action
Goal Area H: Revitalize and Preserve Neighborhoods and Housing		
Create Safe and Attractive Neighborhoods that Contain a Diversity of Housing Types for all Income Levels	**H-1.1** Encourage a Diversity of Building Types, Ownership, Prices, Designs, and Site Plans for Residential Areas Throughout The Planning Area.	**1.1.a** Put small-lot single family developments in the Low-Medium density land use designations that surround the Mission Avenue Urban Village, reserving the Village Residential for higher densities. **1.1.b** Through the land entitlement process, ensure that a mix of higher density housing types including attached town-homes, condominiums, and apartments are distributed throughout the Village Residential land use designation of the Mission Avenue Urban Village. (cont'd)

TABLE II-2 (Continued)

Specific Policies in the South Merced Specific Plan

Goal	Policy	Implementing Action
Goal Area H: Revitalize and Preserve Neighborhoods and Housing (cont'd)		
(cont'd)		**1.1.c** As a means to provide housing opportunities to all income levels, require that a portion of the Village Residential land use designation of the Mission Avenue Urban Village has a minimum density of 20-units per acre. **1.1.d** Within the low-density residential land use designation, provide a mixture of lots in each subdivision that meets the R-1-5 and R-1-6 bulk lot requirements of the Merced Municipal Code.
	H-1.2 Promote Site Designs that Create Safe and Attractive Neighborhoods	**1.2.a** Encourage Planned Development Zoning in the Planning Area. **1.2.b** Incorporate the principles of crime prevention through environmental design (CPTED) in all projects.
Goal Area I: Improve Infrastructure & Public Services		
Implement Strategies that Fill Gaps in Missing Infrastructure and Public Services	**I-1.1** Seek to Provide Storm-Water Drainage Facilities to Minimize Flooding and to Provide for Pedestrian Movement	**1.1.a** Create a storm drain system with basins that simulate natural water features alongside the Class I pedestrian/bike path system. **1.1.b** Include key infrastructure deficient sites in capital improvement plans, financing plans, and other existing City mechanisms to begin the process of improving or installing missing infrastructure, namely: (a) Storm drainage on Childs Avenue, east of SR 59; (b) Signal installation and roadway alignment of SR 59 and Childs Avenue; (c) Near-term pavement and street light improvements on Mission Avenue between SR 59 and SR 99; (d) The Childs Avenue/SR 99 interchange; and (e) Removal of sight-obscuring features that could cause traffic safety concerns, for example, at the intersection of Childs Avenue and "B" Street. **1.1.c** As part of annexation proposals, inventory where public improvement upgrades to City standards are needed. Seek to require new growth to provide for these improvements throughout the entire annexation area.

TABLE II-2 (Continued)

Specific Policies in the South Merced Specific Plan

Goal	Policy	Implementing Action
Goal Area I: Improve Infrastructure & Public Services (cont'd)		
(cont'd)		**1.1.d** Ensure that infrastructure required of private development projects permitted in Merced County (but within future City limits) is documented and installed at the earliest possible time.
	I-1.2 Remove Jurisdictional Boundary Conflicts to Make it Easier for Problems to be Resolved	**1.2.a** Target the SR 59 Corridor as a priority annexation area. **1.2.b** Reasonable efforts shall be taken to avoid the formation of "peninsulas" or "islands" as part of any new annexation proposals. As a general rule, there should be no more than two sides of any annexation boundary adjacent to lands in Merced County.
	I-1.3 Cooperate with Merced Area School Districts to Provide School Sites that are Centrally Located to the Populations They Serve and are Adequate to Serve Community Growth.	**1.3.a** Work with the Weaver Union School District to designate an appropriately sited school north of the Mission Avenue Urban Village. **1.3.b** Work with the Merced Union High School District to designate an appropriately sited high school in the planning area. Said facility should not be located in or adjacent to industrially zoned lands, the airport, and State Highway 99, and should be consistent with the siting criteria of the City specified in the *Merced Vision 2015 General Plan*. If located next to the planned regional park, then the City and MUHSD will explore opportunities for joint use.
Goal Area CD: Build Identity, Character and Community Design		
Implement Strategies that Build Identity and Character and Community Design.	**CD-1.1** Create and Enforce Codes that Will Foster the Development of an Aesthetic Environment.	**1.1.a** The requirement to abide by the North Merced Sign Code shall be considered as a potential public benefit of newly annexed lands. Additionally, consider a sign code amendment that affords the Plan area with high-quality sign ordinances similar to those used in North Merced. **1.1.b** Where zoned "Planned Development," regard the following features as important elements of development projects and make provisions for: (a) Solar orientation and design; (b) Affordable housing for very-low, low, and moderate income groups; and (c) Substantial open space and enhanced building architecture.

TABLE II-2 (Continued)

Specific Policies in the South Merced Specific Plan

Goal	Policy	Implementing Action
Goal Area CD: Build Identity, Character and Community Design (cont'd)		
(cont'd)		**1.1.c** Code enforcement shall proactively seek to remove illegal signs, unsightly fences, inoperable vehicles, and trash. Additionally, actively enforce weed abatement, removal of trash from vacant lots, and storage of trash containers in side and rear yards. **1.1.d** Encourage the Merced County Fair Board to improve the image and appearance of the swap meet operations on Childs Avenue. Alternatively, encourage the Board to replace it with an alternate use that is more compatible with the developing residential neighborhood. **1.1.e** The removal of unsafe abandoned buildings is a City priority. **1.1.f** Require high quality architectural, site (signs, lights, walls, etc.), and landscape designs for developments that abut SR 99.
	CD-1.2 Beautify and Enhance the Design of Gateway Roads in the Planning Area.	**1.2.a** Require design treatments along Childs Avenue (between SR 99 and SR 59), Mission Avenue (between SR 99 and SR 59), Tyler Road, and SR 59 that will enhance the aesthetic qualities of the roadways. For example: (a) Encourage and/or provide programs to businesses on SR 59 that will enable building facade and site landscaping improvements; (b) Install a landscaped median in Tyler Road; and (c) Utilize the established design guidelines (Policy OS-1.3 of the Merced Vision 2015 General Plan) for projects proposed along-side these roads.
Goal Area CE: Commercial and Employment Opportunities		
Implement Strategies to Attract Commercial and Employment Centers to South Merced	**CE-1.1** Provide Opportunities for Appropriate and Varied Commercial and Industrial Uses Throughout the Planning Area	**1.1.a** Promote SR 59 south of Childs Avenue as a major auto service/agricultural service corridor. **1.1.b** Maintain industrial land use designations east of the airport, and south of Childs Avenue west of SR 99. **1.1.c** Provide zoning and seek to provide key services currently absent in the Plan area, including but not limited to: (cont'd)

TABLE II-2 (Continued)

Specific Policies in the South Merced Specific Plan

Goal	Policy	Implementing Action
Goal Area CE: Commercial and Employment Opportunities ((cont'd)		
(cont'd)		(cont'd) (a) Public services such as a fire station and schools, (b) Health-care facilities; (c) Neighborhood serving retail; (d) Professional offices; and (e) Banks and other financial-related offices**.** **1.1.d** Develop regional-serving retail near the Mission Avenue/SR 99 interchange, such as a major retail mall, big-box retail, freeway-oriented retail, and commercial recreational facilities. **1.1.e** Support Business Park land uses located at the intersection of R Street and Gerard Avenue that provide a mixture of commercial and office uses that serve populations in both the industrial park to the southwest and residential neighborhood to the northeast, and discourage uses that do not.
	CE-1.2 Use the City's Urban Village Concept, Policies, and Design Guidelines for Development in the Plan Area.	**1.2.a** Develop the urban village on Mission Avenue, east of Tyler Road, in accordance with the Urban Design Chapter of the *Merced Vision 2015 General Plan*, and the associated urban village policies of its land use and transportation and circulation chapters. **1.2.b** While it is important to promote SR 59 south of Childs Avenue as a major auto service/agricultural service corridor, be flexible to allow for neighborhood-serving retail, and where feasible, require such development to be consistent with urban village design principles.
Goal Area OS: Enhance Park, Open Space & Community Facilities		
Build Open Space Features to Enhance South Merced's Living Environment	**OS-1.1** Develop a safe pedestrian and Bicycle System with Routes Between Open Spaces, Schools, and Key Destinations in the Plan Area.	**1.1.a** As development occurs, require construction of the Plan's primary and secondary Class I (off-street) bike/pedestrian path system. The primary route is distinguished from the secondary route by its width, additional open space, and preference to be located away from paralleling streets where possible. The secondary routes are narrower and located alongside collector roads.

TABLE II-2 (Continued)

Specific Policies in the South Merced Specific Plan

Goal	Policy	Implementing Action
Goal Area OS: Enhance Park, Open Space & Community Facilities (cont'd)		
(cont'd)		**1.1.b** The Class I bike/pedestrian path system between Henry Street and Tyler Avenue is envisioned to be a wide linear park whose primary feature is a storm-drain system with sinuous basins that simulate a natural water feature.
		1.1.c As determined by City staff on a site-by-site basis, the width and design of the Class I bike/pedestrian path system will vary through-out the Plan area depending upon adjacent land uses, use of stormwater basins, and traffic needs and impacts. An overall minimum width of 82-feet as depicted in Figure 6.1 of the *Merced Park and Open Space Master Plan* (page 6-50) should be assumed in the initial design of a project. Variations to this width are probable. **1.1.d** Design arterial and collector street intersections and roadway segment cross-sections with wide medians and curb bulb-outs in order to: (a) Shorten the time a pedestrian or bicyclist is located in the travel lanes; (b) Create a safe-haven in the center median; and (c) Serve to calm traffic. **1.1.e** In all situations, the Class I bike/ pedestrian path system shall be designed and constructed to provide ample lighting and surveillance opportunities from adjacent land uses and streets. Where the pathway runs next to a cul-de-sac, broad vision-corridors (instead of narrow view sights between buildings and fences) shall be provided. **1.1.f** As part of annexation proposals, conduct a study to determine where improvements are missing, then implement a program to install missing sidewalks, crosswalks, bike facilities, and lighting**.**

TABLE II-2 (Continued)

Specific Policies in the South Merced Specific Plan

Goal	Policy	Implementing Action
Goal Area OS: Enhance Park, Open Space & Community Facilities (cont'd)		
(cont'd)	**OS-1.2** Provide High-Quality Park and Recreational Facilities Consistent with the Merced Park and Open Space Master Plan.	**1.2.a** Consider the expansion of Flanagan Park to the east for use as larger sports fields. **1.2.b** Install picnic benches, lights, and other park-related features at existing parks where needed. **1.2.c** Continue efforts to acquire new park sites within future growth areas in advance of development to meet the recreational open space needs of a growing population. **1.2.d** With regard to the regional park, engage the citizens of Merced for the purposes of gathering comments and ideas to help create a community-based concept for its design and use.
	OS-1.3 Develop Unique Features in South Merced to Attract Visitors and Residents from other Parts of the City	**1.3.a** Develop a signature 40-acre regional park as a draw to the Plan area and include notable features such as soccer and baseball sports fields, a waterplay feature, an open air theater, a meeting hall/community hall (for wedding/ events), slow pitch softball fields, and a skate park or BMX circuit. **1.3.b** Encourage the siting of the following as part of or near the regional commercial shopping center or regional park: (a) Private water theme park; (b) Youth facility; (c) Batting cages, miniature golf, or similar commercial recreational use; (d) Year-round aquatic recreation facility; and/or (e) Arts facility. **1.3.c** Encourage access to retail, cultural shops and markets, art galleries, and restaurants serving an array of ethnic foods. **1.3.d** As part of the new neighborhood, community, and regional shopping centers, develop public plazas that include items such as distinctive water features, colorful gardens, benches and gazebos, and performance and teaching spaces.

TABLE II-2 (Continued)

Specific Policies in the South Merced Specific Plan

Goal	Policy	Implementing Action
Goal Area OS: Enhance Park, Open Space & Community Facilities (cont'd)		
(cont'd)	**OS-1.3** Require new development within airport influence areas to be designed and operated to enable the continued operation and growth of the Merced Municipal Airport	**1.4.a** Consistent with the land use diagram for the South Merced Specific Plan, do not permit new residential uses to occur within Airport Influence Zones B1 and B2. Limit population densities in commercial, business park, Industrial districts and other non-residential uses to 25 people per acre in the B1 zone and 50 people per acre in the B2 zone. **1.4.b** Prohibit children's schools, day care centers, libraries, hospitals, nursing homes and other highly noise sensitive uses in the B1 and B2 zones. **1.4.c** Require applicants to comply with FAA review requirements for projects within the B1 and B2 zones either prior to City approval of projects or as a condition of approval. This includes review for height limits and other hazards to flight. **1.4.d** For new developments, seek to require (a) disclosure of airport proximity and aircraft overflights in all real estate transactions involving property within the airport influence areas; (b) aviation easements in zone B1; and (c) deed notices in zone B2. **1.4.e** The City of Merced will comply with the state statute that requires Airport Land Use Commission review of certain development actions.
Goal Area T: Circulation & Transportation		
Reduce Traffic Congestion and Improve Accessibility	**T-1.1** Reduce Congestion and Improve Accessibility by Constructing New and Improved Road Connections and Transit Services.	**1.1.a** Independent of or concurrently with, but not after approval of annexation of lands near the potential over-crossings of SR 99 at Gerard Avenue or Henry Road, a decision by the City based on further study as to the need and desire to extend one, both, or neither streets over SH 99 shall have been made. **1.1.b** Align Tyler Road with B Street. Additional study may be needed to determine the best alignment of roads in the area.

TABLE II-2 (Continued)

Specific Policies in the South Merced Specific Plan

Goal	Policy	Implementing Action
Goal Area T: Circulation & Transportation (cont'd)		
(cont'd)		**1.1.c** Utilize R Street, M Street, G Street, D Street, B Street, DeLong Street, and Brantley Street as important north-south oriented road connections. Independent of or concurrently with, but not after approval of annexation of lands in the Plan area east of SR 59, create a road improvement and financing plan that will define the location, magnitude, and funding for improvements that will be needed on these and other roads north of Childs Avenue. **1.1.d** In future site planning designs, explore the use of rear-access local roads at the rear of the commercial properties that front SR 59. **1.1.e** Independent of or concurrently with, but not after approval of annexation of lands near Childs Avenue and SR 99, create an interchange and financing plan that will define the location, magnitude, and funding for improvements that will be needed. Require new developments that will use the interchange and ramps at Highway 99 and Childs Avenue to contribute for future improvement of said interchange. **1.1.f** Prior to further development that will utilize SR 59, work with Caltrans to construct signals at: (a) Gerard Avenue and SR 59; (b) SR 59 and Mission Avenue; and (c) Childs Avenue and SR 59. (Begin the process to widen SR 59 between Childs Avenue and Mission Avenue.) **1.1.g** Work with Caltrans to make intersection improvements at Childs Avenue and SR 59 (align, widen, and improve visibility and pedestrian safety) to maximize developer interest in pursuing commercial development projects. Consider an interim project that realigns road and installs stop signs.

TABLE II-2 (Continued)

Specific Policies in the South Merced Specific Plan

Goal	Policy	Implementing Action
Goal Area T: Circulation & Transportation (cont'd)		
(cont'd)		**1.1.h** Utilize the following strategies when planning for transit use: (a) Avoid residential subdivision designs that require pedestrians to duplicate walking distance (double-back) to reach public transit routes; (b) Avoid creating barriers that prevent convenient access to current or prospective public transit routes; (c) Plan for multi-modal transfer sites at regional and neighborhood commercial sites that incorporate auto parking areas, bike parking, transit, pedestrian and bicycle paths, and park and ride pick-up points; (d) Provide transit stops on major streets; (e) Avoid whenever possible public transportation transfer points that force passengers to cross major vehicle routes on foot; and (f) Provide off-street passenger loading/ unloading at major public transportation destinations (shopping centers, etc.).
	T-1.2 Implement New and Alternative Truck Routes that Minimize Truck Travel in Neighborhoods	**1.2.a** Encourage greater use of the Mission Avenue/Dickenson Ferry Road as a future truck route. Concurrently, seek to reduce the use of SH 59 and V Street as a truck route. **1.2.b** Develop road patterns that discourage local truck travel through neighborhoods.

B. INTENDED USES OF THE EIR

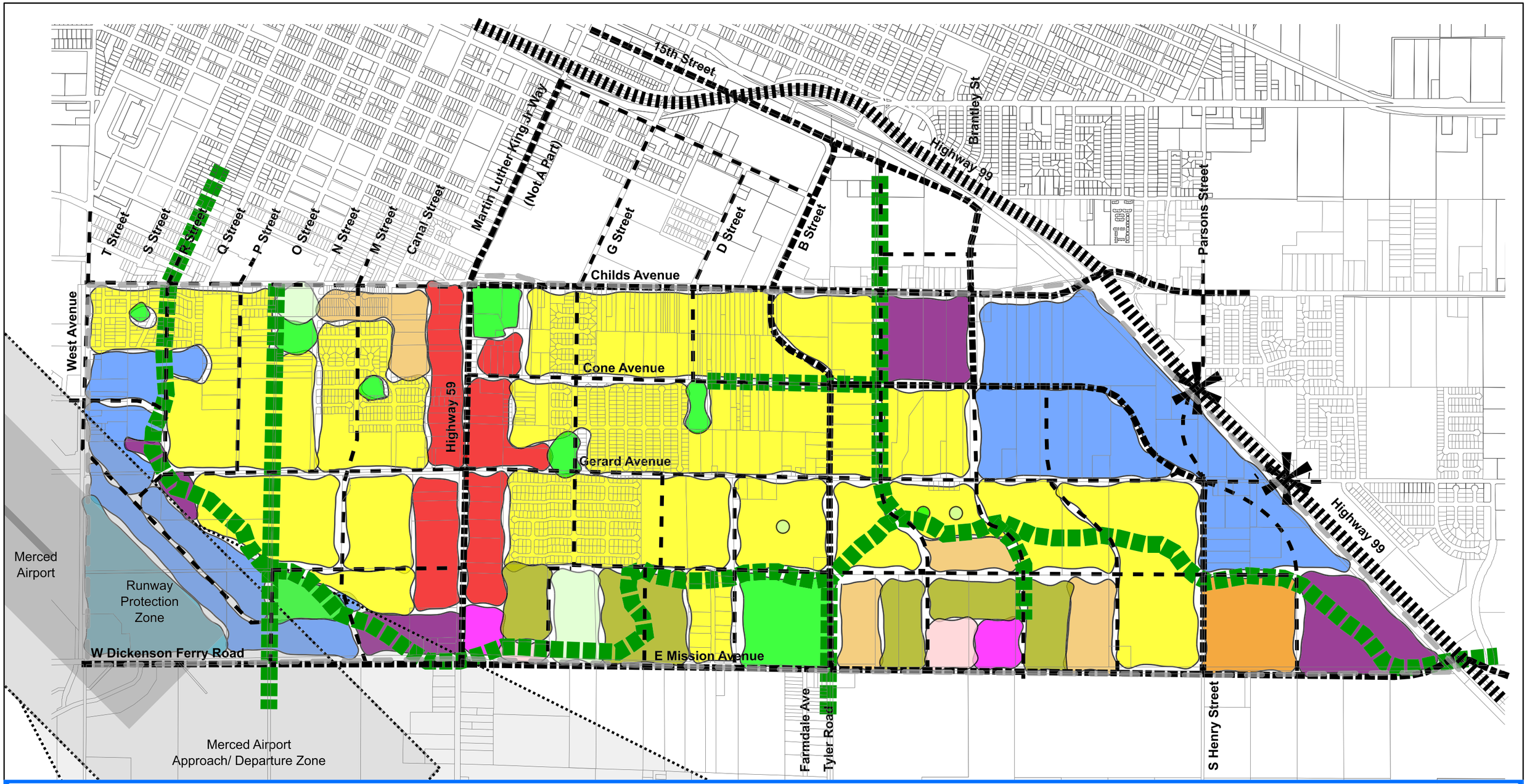
The intended use of the EIR is to disclose to decision makers and the public the significant environmental impacts of the project. The Lead Agency for this project is the City of Merced.

Table II-3 identifies the permits and other approvals known at the present time to be required from agencies to process the project.

TABLE II-3

Permits and Other Approvals Required

Agency	Permits, Approvals, and Related Environmental Review Requirements
City of Merced	1. Amendment to the City's General Plan 2. Adoption of the South Merced Specific Plan 3. Annexation / Prezoning 4. Approval of one or more Tentative Tract Maps.
Merced Irrigation District (MID)	Subdivision Drainage Agreement
Merced County LAFCO	Annexation
San Joaquin Valley Air Pollution Control District (SJVAPCD)	Authority to Construct and Permit to Operate permits for commercial uses that will produce emissions (e.g., gasoline stations, dry cleaners etc.).
California Department of Transportation (Caltrans) District 10	Issuance of Encroachment Permits
California Department of Fish and Game (CDFG), San Joaquin Valley – Southern Sierra Region 4	Streambed Alteration Agreement (Section 1600 of California Fish and Game Code)



SOUTH MERCED SPECIFIC PLAN - LAND USE CONCEPT

Figure II-1

Prepared map by permission of the City of Merced. 2005.

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LEGEND

- Specific Plan Boundary
- Airport Flight Zone
- Linear Open Space / Pathway
- Agricultural
- Business Park
- Commercial - Regional Community
- Commercial - General
- Commercial - Neighborhood
- Commercial - Office
- Industrial
- Open Space / Park Recreation
- Residential - Low Density
- Residential - Low to Medium Density
- Residential - Village
- School
- Floating Park Site
- Floating School Site
- Street - Arterial
- Street - Collector
- Highway 99
- Proposed Freeway Overpass

N W E S

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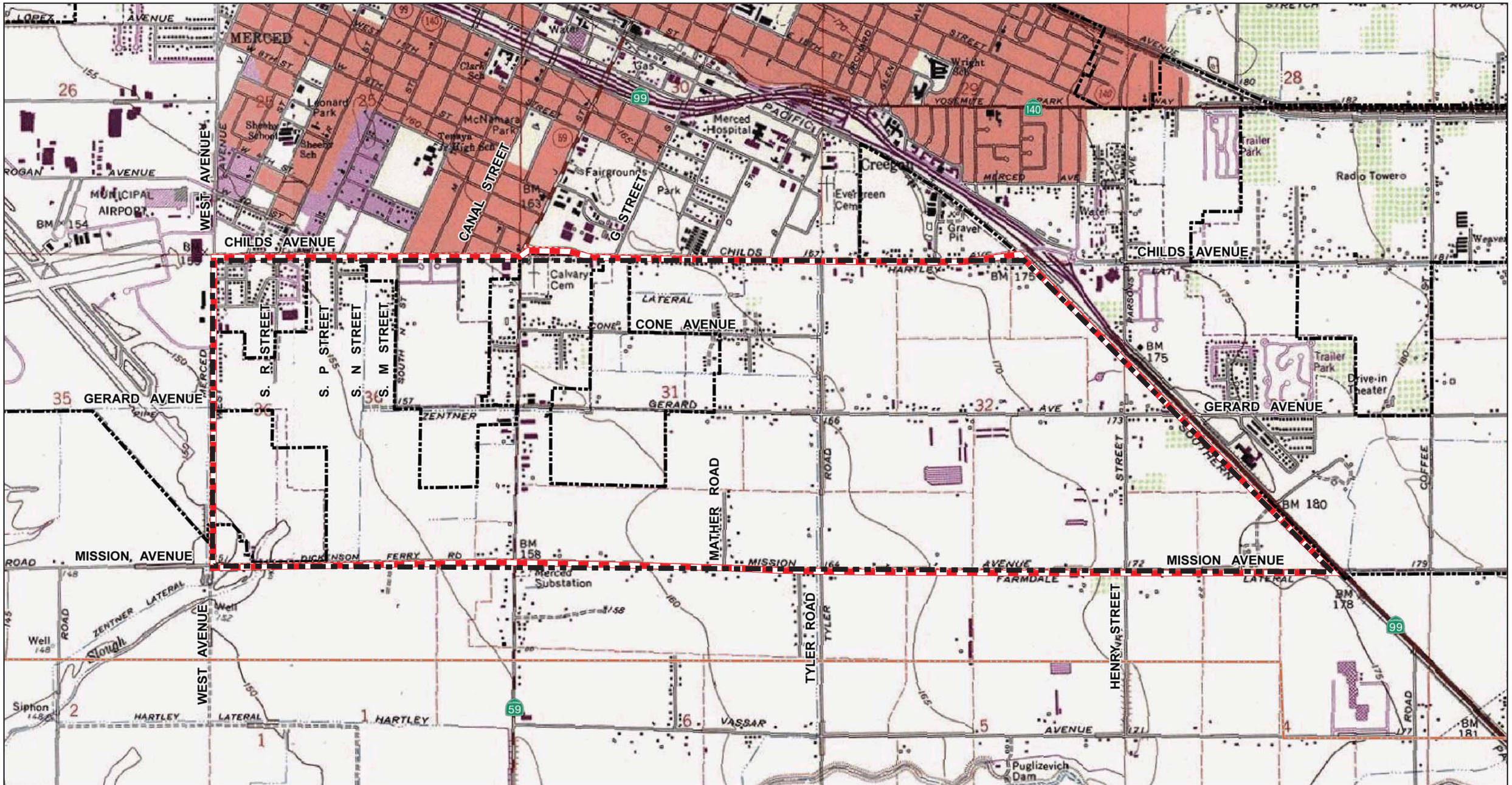


SOUTH MERCED SPECIFIC PLAN - TOPOGRAPHIC MAP

Figure II-2

Prepared map by permission of the City of Merced. 2005.

URS

May 16, 2006

LEGEND

- MERCED CITY LIMITS
- SOUTH MERCED SPECIFIC PLAN
- SHPERE OF INFLUENCE

N
W E
S

0 800 1,600 Feet

1 inch equals 800 feet

USGS 7.5' Quad
Merced, Atwater

A. REGIONAL SETTING

Merced County, where the South Merced Specific Plan Area is situated, is in the heart of the San Joaquin Valley. Merced County is one of the richest agricultural regions in the United States. The combination of rich flood plains, climate, and irrigation systems creates an ideal environment for agribusiness. The City of Merced is the large and is the County Seat. The other incorporated cities in the County are Atwater and Livingston, northwest of the City of Merced along SR 99, and Dos Palos, Los Baños, and Gustine, in western Merced County, along SR 33 and SR 152 (Los Baños). Other highways within the County are SR 59, SR 140, SR 165, and Interstate 5 (I-5). With the exception of state and federally owned lands, unincorporated areas are under the jurisdiction of Merced County.

B. LOCAL SETTING

The City of Merced is approximately 150 miles southeast of San Francisco, along the western slope of the Sierra Nevada mountain range on SR 99. The City of Merced is the county seat for Merced County and is known as the "Gateway to Yosemite." Merced is situated at the connection of SR 99 and SR 140, which reaches Yosemite National Park 80 miles to the east. SR 59 is the other state route running through the City of Merced.

The Specific Plan study area is in the southern portion of the City of Merced. The Specific Plan study area comprises 2,052 acres and is bounded on the north by Childs Avenue, by SR 99 on the east, by Mission Avenue/Dickenson Ferry Road on the south, and by West Avenue and the Merced Airport on the west (see Figure III-1).

According to the California Department of Finance, the City of Merced was estimated to have a population of 73,610 in 2006.

C. RELATIONSHIP TO REGIONAL AND LOCAL PLANS

The South Merced Specific Plan is related to various plans of the following agencies in Merced County.

1. COUNTY OF MERCED

The County of Merced GP has developed Specific Urban Development Plan (SUDP) boundaries around the incorporated cities and unincorporated communities within the County. The SUDP is the land-use tool the County has used to promote urban expansion in and around existing communities where urban infrastructure currently exists. The SUDP is described in the Merced County GP as the recognized ultimate growth boundary of that community for the life of the plan, with all lands within it planned for eventual urban and urban-related development. The southernmost boundary of the SUDP for the City of Merced runs along Mission Avenue, the southern boundary of the Specific Plan area.

Land-use decisions within the City of Merced's SUDP are currently controlled by the City/ County Property Tax Sharing Agreement of 1997. Based on this tax-sharing agreement:

- The County agrees not to change the land-use designation of territory from a rural classification to an urban designation. The County will maintain existing agricultural zoning within this non-urban designation.

- Any discretionary approval by the County within those areas currently zoned for urban development will be subject to adopted City development standards.

- During review of discretionary projects within urban-zoned areas, the County will provide an opportunity for the city to discuss the merits of annexation with the affected property owners.

2. CITY OF MERCED VISION 2015 GENERAL PLAN

The land-use concept for the South Merced Specific Plan area is based on the urban village concept of mixed use, pedestrian- and transit-friendly neighborhoods that are proposed under the City's *Merced Vision 2015 General Plan* (City of Merced, 1997). At a citywide scale, this urban design concept defines the relationship between various parts of the City, linked together by open space and transportation corridors. At the neighborhood scale, the urban village concept results in the development of commercial centers surrounded by residential areas, open space, and public facilities (*Merced Vision 2015 General Plan*, Chapter 6).

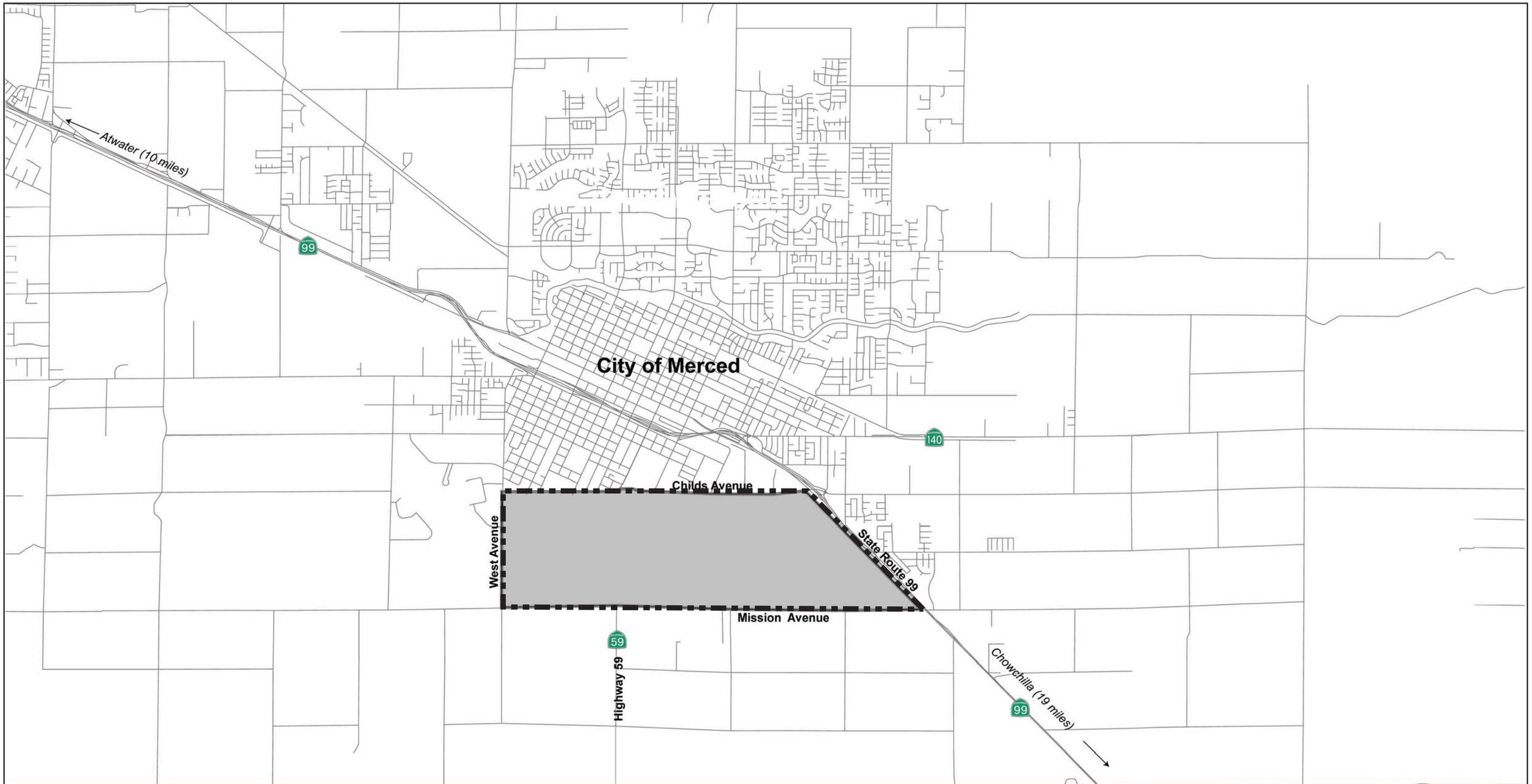
3. MERCED COUNTY AIRPORT LAND-USE COMMISSION

The Specific Plan area is within 2 miles of the Merced Municipal Airport. The Airport is in the jurisdiction of the *Merced County Airport Land Use Compatibility Plan* (Merced County, 1999), which provides guidelines for land uses surrounding the airport to minimize land use, noise, and hazards impacts.

D. BASELINE CONDITIONS

Pursuant to Section 15125(a) of the CEQA Guidelines, "(a) An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant."

In response to Section 15125(a), the local setting is briefly described (see Section III-B). More detailed information is provided in Chapter IV, which describes the "Existing Physical Conditions in the Study Area" relevant to each environmental topic analyzed in this EIR.



SOUTH MERCED SPECIFIC PLAN - LOCATION MAP

Figure III-1

Prepared map by permission of the City of Merced. 2005.

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N
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Not To Scale

A. AIR QUALITY

This section describes how development associated with the South Merced Specific Plan will affect air quality. Where significant effects are identified, mitigation measures are provided to reduce those impacts to the extent feasible.

1. ENVIRONMENTAL SETTING

The following information is provided in accordance with Section 15125 of the CEQA Guidelines. This environmental setting is the baseline for determining whether the Specific Plan will have a significant impact on air quality.

a. Study Area for Direct Impacts

Potential impacts to air quality as a result of development under the Specific Plan will be limited to the immediate effects of dust and exhaust released during construction and any localized effects that might arise from point sources of air pollution from future commercial or industrial land uses within the Specific Plan area. The project site and area surrounding the site up to ¼ mile will be the study area for impacts related to air quality. This area has been selected because it was determined to be a reasonable distance for impacts that may occur as a result of traffic-related emissions.

b. Surrounding Area

The San Joaquin Valley Air Basin (SJVAB) boundaries constitute the surrounding area for the Specific Plan.

c. Study Area for Cumulative Impacts

The SJVAB boundaries also constitute the study area for cumulative air quality impacts. The air basin boundaries encompass the following counties within the southern San Joaquin Valley: San Joaquin; Stanislaus; Merced; Madera; Fresno; Kings; Tulare; and Kern.

d. Methods

The San Joaquin Valley Air Pollution Control District (SJVAPCD) provides guidance in evaluating the air quality impacts of projects in its *"Guide for Assessing and Mitigating Air Quality Impacts"* (the GAMAQI) (SJVAPCD, 2002). Whenever possible, the SJVAPCD recommends using the emissions estimating procedures published by the California Air Resources Board (CARB) and incorporated into the model URBEMIS2002 (or most recent version). This procedure allows for the separate estimation of PM_{10} and other emissions associated with project construction and the emissions associated with project operations, primarily those from traffic associated with the occupied development. Operational emissions had previously been evaluated as part of the Merced Vision 2015 GP EIR (City of Merced, 1997b) for the entire City of Merced. This calculation was performed only for the South Merced area that is covered under the Specific Plan. Estimates of area source and vehicle emissions from

the project have been included in this EIR. The URBEMIS2002 input and results are included in Appendix A.

The GAMAQI procedures also describe methods to evaluate the concentrations of carbon monoxide (CO) to determine whether the accumulation of this criteria pollutant may exceed applicable thresholds. The entire air basin, including Merced County, is now considered in attainment for this pollutant. This status, and previous analyses of congested streets within the much larger City of Fresno area, indicate that the likelihood of any localized exceedances of the CO standards within Merced is very low.

Specific thresholds of significance are defined in the GAMAQI (SJVAPCD, 2002, pp 24–29) and in SJVAPCD Rule 2201. Applicable thresholds are summarized in the following paragraphs.

Air quality impacts will be considered significant if emissions from project operations (i.e., emissions from traffic associated with the completed project) exceed the following limits:

Reactive Organic Gases (ROG)	10 tons/year
Nitrogen Oxides (NO_X)	10 tons/year
Particulate Matter (PM_{10})	15 tons/year

The thresholds for ROG and NO_X are documented in the GAMAQI. The threshold for PM_{10} is from SJVAPCD Rule 2201. Rule 2201 applies to new or modified stationary sources. However, for this SP EIR, this threshold will represent a conservative value for all operational sources, including area and mobile sources.

The SJVAPCD also provides some guidance in assessing these emissions by defining small projects that typically generate traffic volumes emitting less than the specified pollutant limits.

There is no specific numerical threshold for evaluating emissions of PM_{10} resulting from grading and construction activities. Instead, all projects are required to incorporate measures identified in the SJVAPCD Regulation VIII. However, construction emissions from the construction equipment and construction employee vehicles may be compared to the operational annual thresholds to determine the significance of the construction impacts.

Any project with the potential to expose sensitive receptors (including residential areas) or the general public to substantial levels of toxic air contaminants will be deemed to have a potentially significant impact.

An odor analysis was not performed for this Specific Plan EIR. The General Plan EIR discusses the specific goals and policies that address identified potential adverse impacts associated with nuisances such as odor. Odor nuisances are typically handled by regulating the placement of industrial and commercial uses.

e. Existing Physical Conditions in the Study Area

(1) Common Air Pollutants

The following is a general description of the physical and health effects for air pollutants that could be emitted from the project or are known in the area.

(a) Ozone (O_3)

Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. Here, ground level or "bad" O_3 is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up, where it meets the second layer, the stratosphere. The stratospheric or "good" O_3 layer extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays (UV-B).

"Bad" O_3 is what is known as a photochemical pollutant. It needs ROGs, NO_X, and sunlight. ROG and NO_X are emitted from various sources throughout Merced County. To reduce O_3 concentrations, it is necessary to control the emissions of these O_3 precursors.

Significant O_3 formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight.

Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. Ozone, the primary constituent of smog, is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, O_3 is not emitted directly into the air by specific sources. Ozone is created by sunlight acting on other air pollutants (called precursors), specifically NO_X and ROGs. Sources of precursor gases to the photochemical reaction that form O_3 number in the thousands. Common sources include consumer products, gasoline vapors, chemical solvents, and combustion products of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses, such as bakeries and dry cleaners, the O_3-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. High O_3 concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins. Approximately 50 million people lived in counties with air quality levels above the United States Environmental Protection Agency (USEPA) health-based national air quality standard in 1994. The highest levels of O_3 were recorded in Los Angeles. High levels also persist in other heavily populated areas, including the Texas Gulf Coast and much of the Northeast.

While the O_3 in the upper atmosphere absorbs harmful UV light, ground-level O_3 is damaging to the tissues of plants, animals, and humans, as well as to a wide variety of inanimate materials, such as plastics, metals, fabrics, rubber, and paints. Societal costs from O_3 damage include increased medical costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

Health Effects: While O_3 in the upper atmosphere protects the earth from harmful UV radiation, high concentrations of ground-level O_3 can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high O_3 levels. Ozone also damages natural ecosystems, such as forests and foothill communities. High levels of O_3 may negatively impact immune systems, making people more susceptible to respiratory illnesses including bronchitis and pneumonia. Ozone also accelerates aging and exacerbates pre-existing asthma and bronchitis and, in cases of high concentrations, can lead to the development of asthma in active children. Active people, both children and adults, appear to be more at risk from O_3 exposure than those with a low level of activity. In addition, the elderly and those with respiratory disease are considered sensitive populations for O_3.

People who work or play outdoors are at a greater risk for harmful health effects from O_3. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily as adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. Also, children inhale more air per pound of body weight than adults, and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures.

Ozone is a powerful oxidant – it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthma symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and micro-organisms. Exposure to levels of O_3 above the current ambient air quality standard leads to lung inflammation, lung tissue damage, and a reduction in the amount of air inhaled into the lungs. For the first time, recent evidence has linked the onset of asthma to exposure to elevated O_3 levels in exercising children (McConnell, R. et al., 2002). Elevated O_3 concentrations also reduce crop and timber yields, damage native plants, and damage materials such as rubber, paints, fabric, and plastics (CARB and American Lung Association of California, 2004).

(b) Reactive Organic Gases and Volatile Organic Compounds

Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases, including volatile organic compounds (VOCs) and ROGs. ROGs include all hydrocarbons except those exempted by CARB. Therefore, ROGs are a set of organic gases based on state rules and regulations. VOCs are similar to ROGs in that they include all organic gases except those exempted by federal law. The list of compounds exempt from the definition of VOC is included by the SJVAPCD and is presented in District Rule 1102. Both VOCs and ROGs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. Combustion engine exhaust, oil refineries, and oil-fueled power plants are the primary sources of hydrocarbons. Another source of hydrocarbons is evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

Health Effects: The primary health effects of hydrocarbons result from the formation of O_3 and its related health effects (see O_3 health effects discussion). High levels of hydrocarbons in the

atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate federal or California ambient air quality standards (AAQS) for ROG. Carcinogenic forms of ROG are considered toxic air contaminants (TACs). An example is benzene, which is a carcinogen.

(c) Carbon Monoxide

CO is emitted by mobile and stationary sources as a result of the incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive.

CO is a byproduct of motor vehicle exhaust, which contributes more than two-thirds of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95% of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO.

Health Effects: CO enters the bloodstream and binds more readily to hemoglobin, the oxygen-carrying protein in blood, than to oxygen. It reduces the oxygen-carrying capacity of blood, thus reducing oxygen delivery to the heart, brain, and other organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected, but only at higher levels of exposure. Exposure to CO can cause chest pain in heart patients, headaches, and reduced mental alertness. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and, in prolonged, enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin in the blood. Health effects observed may include early onset of cardiovascular disease, behavioral impairment, decreased exercise performance of young, healthy men, reduced birth weigh, Sudden Infant Death Syndrome (SIDS), and increased daily mortality rate (Fierro, M.D., et al., 2001).

Most of the studies evaluating the adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in symptoms ranging from common flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness and death. Hexter and Goldsmith (1971) report an association between daily death rate and exposure to ambient CO in Los Angeles County. They postulate a concentration of 20.2 parts per million (ppm) (the highest daily concentration recorded during a 4-year period) contributed 11 out of 159 deaths. Additional studies conducted in Los Angeles and Sao Paulo also suggest a relationship between daily death rates and CO concentrations (Kinney and Ozkaynak, 1991; Saldivia et al., 1995).

(d) Nitrogen Oxides

NO_X is a family of highly reactive gases that are primary precursors to the formation of ground-level O_3; they also react in the atmosphere to form acid rain. NO_X is emitted from the use of solvents and combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources, such as electric utilities and industrial boilers. NO_X can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals from the production of particulate nitrates. Nitrogen dioxide (NO_2), a brownish gas, is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates.

Health Effects: NO_X is an O_3 precursor that combines with ROG to form O_3. See the Ozone section for a discussion of the health effects of O_3.

Direct inhalation of NO_X also can cause a wide range of health effects. NO_X can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of NO_2 may lead to changes in airway responsiveness and lung function in individuals with pre-existing respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO_2 may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. Other health effects associated with NO_X are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. Airborne NO_X also can impair visibility. NO_X is a major component of acid deposition in California. NO_X may affect both terrestrial and aquatic ecosystems. NO_X in the air is a potentially significant contributor to several environmental effects, such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduces the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

Nitrogen dioxide is toxic to various animals as well as to humans. Its toxicity relates to its ability to combine with water to form nitric acid in the eye, lung, mucus membranes, and skin. Studies of the health impacts of NO_2 include experimental studies on animals, controlled laboratory studies on humans, and observational studies.

In animals, long-term exposure to NO_X increases susceptibility to respiratory infections, lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO_2 can suffer lung irritation and potential lung damage.

Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and hospital admissions for respiratory conditions.

NO_X contributes to a wide range of environmental effects directly and when combined with other precursors in acid rain and O_3. Increased nitrogen inputs to terrestrial and wetland systems can

lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems, such as those found in estuarine and coastal waters, can lead to eutrophication (a condition that promotes excessive algae growth, which can lead to a severe depletion of dissolved oxygen and increased levels of toxins harmful to aquatic life). Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum that are toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms. NO_X also contribute to visibility impairment (USEPA, 2005a).

(e) Particulate Matter

Particulate matter pollution consists of very small liquid and solid particles floating in the air. Some particles are large or dark enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter also forms when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere. PM_{10} refers to particles less than or equal to 10 microns in aerodynamic diameter. $PM_{2.5}$, a subset of $PM_{10,}$ refers to particles less than or equal to 2.5 microns in aerodynamic diameter.

In the western United States, there are sources of PM_{10} in both urban and rural areas. PM_{10} and $PM_{2.5}$ are emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processing; wood burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. Because particles originate from a variety of sources, their chemical and physical compositions vary widely. Non health-related effects include soiling of buildings. Acidic PM_{10} can also damage manmade materials and is a major cause of reduced visibility in many parts of the U.S.

Health Effects: PM_{10} and $PM_{2.5}$ particles are small enough—about 1/7th the thickness of a human hair, or smaller—to be inhaled into, and lodge in, the deepest parts of the lung, evading the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases; heart and lung disease; and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. PM_{10} and $PM_{2.5}$ can aggravate respiratory disease and cause lung damage, cancer, and premature death.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to adverse health effects of PM_{10}. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from chronic lung disease, such as asthma or bronchitis. Of greatest concern are recent studies that link PM_{10} exposure to the premature death of people who already have heart and lung disease, especially the elderly.

Premature deaths linked to particulate matter are now at levels comparable to deaths from traffic accidents and second-hand smoke. One of the most dangerous pollutants, $PM_{2.5}$ (e.g., from diesel exhaust and fireplace soot) not only bypasses the body's defense mechanisms and becomes embedded in the deepest recesses of the lung, but also can disrupt cellular processes. Population-based studies in hundreds of cities in the U.S. and around the world has demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks. Long-term studies of children's health conducted in California have demonstrated that particulate pollution may significantly reduce lung function growth in children (CARB, 2002).

Attaining the California PM standards would prevent about 6,500 annual premature deaths, or 3% of all deaths. These premature deaths shorten lives by an average of 14 years. This is roughly equivalent to the same number of deaths (4,200 to 7,400) linked to second-hand smoke in the year 2000. In comparison, motor vehicle crashes caused 3,200 deaths and homicides were responsible for 2,000 deaths. Attaining the California PM and O_3 standards would prevent 4,000 annual hospital admissions for respiratory disease, 3,000 annual hospital admissions for cardiovascular disease, and 2,000 annual asthma-related emergency room visits. Exposure to diesel PM causes about 250 excess cancer cases per year in California (CARB, 2002).

A recent study provides evidence that exposure to particulate air pollution is associated with lung cancer. This study found that residents who live in an area that is severely impacted by particulate air pollution are at risk of lung cancer at a rate comparable to non-smokers exposed to second-hand smoke. This study also found an approximately 16% excess risk of dying from lung cancer due to fine particulate air pollution (Pope et al., 2002).

Another study shows that individuals with existing cardiac disease can be in a potentially life-threatening situation when exposed to high levels of ultrafine air pollution. Fine particles can penetrate the lungs and may cause the heart to beat irregularly or can cause inflammation, which could lead to a heart attack (Peters et al., 2001).

Currently, 61% of California's population live in areas that exceed the federal $PM_{2.5}$ air standard, while 89% live in areas that exceed California's $PM_{2.5}$ air standard (CARB, 2004).

(f) Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. Historically, in the late 1970s in the SJVAB portion of Kern County, SO_2 was a pollutant of concern, but with the successful application of regulations, the levels have been reduced significantly. In fact, the latest data from the CARB demonstrates that the highest 1-hour concentration for SO_2 was 0.011 ppm. With the CAAQS being 0.25 ppm, SO_2 concentrations in the SJVAB are only about 4% of the standard. Increases in SO_2 concentrations accelerate the corrosion of metals, probably through the formation of acids. (SO_2 is a major precursor to acidic deposition.) Sulfur oxides also may damage stone and masonry, paint, various fibers, paper, leather, and electrical components.

Health Effects: High concentrations of SO_2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO_2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO_2, in conjunction with high levels of PM, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO_2 is also a major precursor to $PM_{2.5}$, which is a significant health concern. (See the discussion of health effects of particulate matter.) Increased SO_2 contributes to impaired visibility. Particulate sulfate, much of which is derived from SO_2 emissions, is a major component of the complex total suspended particulate mixture.

Sulfur dioxide has a bad odor and it can irritate the respiratory system. Exposure to high concentrations for short periods of time can constrict the bronchi and increase mucous flow, making breathing difficult. Sulfur dioxide can also:

- Immediately irritate the lung and throat at concentrations greater than 6 ppm in many people.
- Impair the respiratory system's defenses against foreign particles and bacteria when exposed to concentrations less than 6 ppm for longer time periods.
- Enhance the harmful effects of O_3. (Combinations of the two gases at concentrations occasionally found in the ambient air appear to increase airway resistance to breathing.)

Sulfur dioxide tends to have more toxic effects when acidic pollutants, liquid or solid aerosols, and particulates also are present. (In the 1950s and 1960s, thousands of excess deaths occurred in areas where SO_2 concentrations exceeded 1 ppm for a few days and other pollutants were also high.) Effects are more pronounced among mouth breathers, e.g., people who are exercising or who have head colds. These effects include:

- Health problems, such as episodes of bronchitis requiring hospitalization associated with lower-level acid concentrations.
- Self-reported respiratory conditions, such as chronic cough and difficult breathing, associated with acid aerosol concentrations. (Asthmatic individuals are especially susceptible to these effects. The elderly and those with chronic respiratory conditions also may be affected at lower concentrations than the general population.)
- Increased respiratory tract infections, associated with longer term, lower-level exposures to SO_2 and acid aerosols.
- Subjective symptoms, such as headaches and nausea, in the absence of pathological abnormalities, as a result of long-term exposure.

Although there are positive benefits from low levels of SO_2, in a very few species growing on sulfur-deficient soils, SO_2 easily injures many plant species and varieties, both native and cultivated. Some of the most sensitive plants include various commercially valuable pines, legumes, red and black oaks, white ash, alfalfa, and blackberry. The effects include:

- Visible injury to the most sensitive plants at exposures as low as 0.12 ppm for 8 hours.
- Visible injury to many other plant types of intermediate sensitivity at exposures of 0.30 ppm for 8 hours.

(g) Sulfates

Sulfates are particulate products of the combustion of sulfur-containing fossil fuels. When SO (or SO_2) is exposed to oxygen, it precipitates out into sulfates (SO_3 or SO_4). Data collected in Merced **County** (identify levels of sulfates that are significantly less than the applicable health standards.

Sulfates (SO_3 and SO_4) are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California as a result of regional meteorological features.

Health Effects: The CARB's sulfates standard is designed to prevent the aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardiopulmonary disease. Sulfates are particularly effective in degrading visibility, and given that they are usually acidic, can harm ecosystems and damage materials and property (CARB, 2005)

(h) Lead

Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until recently to increase the octane rating in auto fuel. Since gasoline-powered automobile engines were a major source of airborne lead, through the use of leaded fuels, and the use of leaded fuel has been mostly phased out, the ambient concentrations of lead have dropped dramatically. Merced **County** no longer monitors lead in the ambient air of the SJVAB.

Health Effects: Exposure to lead occurs mainly through the inhalation of air and the ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments, such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of

fetuses and young children, resulting in learning deficits and lowered IQ. Recent studies also show that lead may be a factor in high blood pressure and subsequent heart disease. Lead also can be deposited on the leaves of plants, presenting a hazard to grazing animals and humans through ingestion (USEPA, 2005a).

(i) Hydrogen Sulfide

Hydrogen sulfide (H_2S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations.

Health Effects: Exposure to low concentrations of H_2S may cause irritation to the eyes, nose, or throat. It also may cause difficulty in breathing for some asthmatics. Exposure to higher concentrations (above 100 ppm) can cause olfactory fatigue, respiratory paralysis, and death. Brief exposures to high concentrations of H_2S (greater than 500 ppm) can cause a loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. However, in many individuals, there may be permanent or long-term effects, such as headaches, poor attention span, poor memory, and poor motor function. No health effects have been found in humans exposed to typical environmental concentrations of H_2S (0.00011 to 0.00033 ppm). Deaths due to breathing in large amounts of H_2S have been reported in various different work settings, including sewers, animal processing plants, waste dumps, sludge plants, oil and gas well drilling sites, and tanks and cesspools.

(2) Visibility-Reducing Particles

This standard is a measure of visibility. The CARB does not yet have a measuring method with enough accuracy or precision to designate areas in the state as attainment or non-attainment. The entire state is labeled unclassified.

(3) Hazardous Air Pollutants

A hazardous air pollutant (HAP) is a term used by the federal Clean Air Act (CAA) that includes various pollutants generated or emitted by industrial production activities. Ten HAPs have been identified through ambient air quality data as being the most substantial health risk in California. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders.

HAPs do not have AAQS. Since no safe levels of HAPs can be determined, there are no air quality standards for HAPs. Instead, HAP impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic “Hot Spots” Information and Assessment Act apply to facilities that use, produce, or emit toxic chemicals; facilities that are subject to its toxic emission inventory requirements must prepare and submit toxic emission inventory plans and reports and periodically update those reports. Of the 16 SJVAB facilities that have been deemed to pose significant health risks under the Act, 14 have subsequently reduced those risks to a level no longer considered significant under the standards of the Hot Spots program.

(4) Sensitive Receptors

Some locations are considered more sensitive to adverse effects from air pollution than others. These locations are termed sensitive receptors. For CEQA purposes, a sensitive receptor is generically defined as a location where human populations, especially children, seniors, and sick persons, are found, and there is a reasonable expectation of continuous human exposure according to the averaging period for the AAQS (e.g., 24-hour, 8-hour, and 1-hour). These typically include residences, hospitals, and schools. The South Merced Specific Plan area is located near several residences that would qualify as sensitive receptors. In addition, the plan also would create new sensitive receptors, such as schools and residences.

(5) Climate and Topography

Merced County is characterized by an inland Mediterranean type climate with moist, cool winters and dry, warm summers. Approximately 94% of the precipitation occurs between October and April. In the study area, the annual average temperature is approximately 62 degrees. The summer maximum average temperature is approximately 97 degrees, with a summer minimum of approximately 58 degrees. The winter maximum average temperature is approximately 57 degrees, with a winter minimum of approximately 37 degrees. Rainfall averages approximately 10.77 inches per year.

Wind patterns are created by marine air flowing in from the San Joaquin River Delta north of the Valley. These winds are generally prevented from leaving the Valley by the mountain ranges on the east, west, and south. The mountain ranges, 4,500 to 14,492 feet in elevation, are also generally higher than the normal height of summer inversion layers, which occur between 1,500 to 3,000 feet. These topographic features result in weak air flow that becomes restricted vertically by high barometric pressure over the Valley. This weak air flow makes the Valley highly susceptible to pollutant accumulation over time.

Wind speed and direction change throughout the day. During the day, northwesterly winds prevail, while in the late evening through early morning, wind flow reverses direction. This is due to cooler drainage wind from the surrounding mountains. This adds to the complexity of regional wind flow and pollutant transport within the Valley.

During winter, wind occasionally originates from the southern end of the Valley and flows in a northerly direction. Generally, winds occurring during the winter months are light and variable with speeds of less than 10 mph. Low wind speeds, combined with low inversion layers, create a climate conducive to high pollutant concentrations during the winter months. Merced County also experiences foggy conditions during the winter.

(6) Status of Air Basin

Monitoring data from throughout the air basin is used to determine whether the air quality within the basin complies with the applicable federal and state standards. Basin-wide data for O_3 are summarized in Table IVA-1.

TABLE IVA-1

Summary of Basinwide Ozone Data

Year	Days Over Standard			Maximum Concentration Recorded (ppm)	
	State*	National			
	1-hour (0.09 ppm)	1-hour (0.12 ppm)	8-hour (0.08 ppm)	1-hour	8-hour
2000	114 days	30 days	103 days	0.17 ppm	0.13 ppm
2001	123 days	32 days	109 days	0.15 ppm	0.12 ppm
2002	127 days	31 days	125 days	0.16 ppm	0.13 ppm
2003	133 days	37 days	128 days	0.15 ppm	0.13 ppm

*Note that the state 1-hour standard of 0.09 ppm is more restrictive than the national standard of 0.12 ppm.

Geographic areas and air basins are classified for each pollutant as either attainment or nonattainment. In general, nonattainment means that the federal standard has been exceeded more than twice per year anywhere within the air basin. For O_3 and PM_{10}, the formula for determining attainment is more complicated. Areas that are designated as nonattainment are subject to further review and the imposition of pollution control strategies.

The nonattainment designation is further subdivided into five categories (listed in order of increasing severity): marginal, moderate, serious, severe, and extreme. The degree of an area's nonattainment status is affected by the extent of the pollution and the expected time period required to achieve attainment.

With respect to the Merced metropolitan area, the SJVAB has been classified as shown in Table IVA-2.

TABLE IVA-2

Air Quality Attainment Status of Merced Area

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone 1-hour	Nonattainment/Extreme	Nonattainment/Severe
Ozone 8-hour	Nonattainment/Serious	No state standard
PM_{10}	Nonattainment/Serious	Nonattainment
$PM_{2.5}$	Nonattainment	No state standard
Carbon monoxide	Unclassified/Attainment	Unclassified
Nitrogen dioxide	Unclassified/Attainment	Attainment
Sulfur dioxide	Unclassified	Attainment
Lead	No designation	Attainment
Hydrogen sulfide	No federal standard	Attainment
Sulfates	No federal standard	Attainment
Visibility-reducing particles	No federal standard	Unclassified

(7) Local Air Quality

There are two air quality monitoring stations in Merced. Ozone data are collected at the South Coffee Avenue station, and PM_{10} data are collected at the station at 2334 M Street. Tables IVA-3 and IVA-4 summarize O_3 and PM_{10} data for the last several years from these two stations.

TABLE IVA-3

Summary of Local Merced Ozone Data

Year	Days Over Standard			Recorded Concentrations ($\mu g/m^3$)	
	State*	National			
	24-hour ($50\ \mu g/m^3$)	24-hour ($150\ \mu g/m^3$)	Annual ($50\ \mu g/m^3$)	Annual Average	High 24-hour Average
2000	69.6 days	0 days	34.9 days	34.9	104.0
2001		0 days	39.1 days	39.1	113.0
2002	84.8 days	0 days	38.8 days	38.8	85.0
2003	44.4 days	0 days	32.2 days	32.1	74.0
2004	12.3 days	0 days	27.9 days	27.9	56.0

Data for the Merced–South Coffee Avenue monitoring station (CARB, 2005b).

$\mu g/m^3$ = micrograms per cubic meter

TABLE IVA-4

Summary of Local Merced PM_{10} Data

Year	Days Over Standard			Recorded Concentrations ($\mu g/m3$)	
	State	National			
	24-hour ($50\ \mu g/m^3$)	24-hour ($150\ \mu g/m^3$)	Annual ($50\ \mu g/m^3$)	Annual Average	High 24-hour Average
2000	69.6 days	0 days	34.9 days	34.9	104.0
2001		0 days	39.1 days	39.1	113.0
2002	84.8 days	0 days	38.8 days	38.8	85.0
2003	44.4 days	0 days	32.2 days	32.1	74.0
2004	12.3 days	0 days	27.9 days	27.9	56.0

Data for the Merced-2334 M Street monitoring station (CARB, 2005b). Recorded concentrations shown are from the national monitoring network samplers. State concentrations are slightly different.

$\mu g/m^3$ = micrograms per cubic meter

A review of the above data shows that, while there is a general trend toward improvement in air quality, the air quality in the Merced area continues to violate state standards and the longer-term national standards for both O_3 and fine particulate matter.

f. Project Design Elements that Avoid Air Quality Impacts

In addition to the goals and policies of the *Merced Vision 2015 General Plan*, the South Merced Specific Plan contains supplementary goals, plans, and implementation actions that may reduce the air quality impacts of the proposed project. The following policies found in the South Merced Specific Plan will help minimize air quality impacts.

- SP Policy CE-1.1. This policy specifies providing opportunities for appropriate and varied commercial and industrial uses throughout the planning area.
- SP Policy OS-1.1. This policy specifies developing a safe pedestrian and bicycle system with routes between open spaces, schools, and key destinations in the planning area.
- SP Policy T-1.1. This policy specifies reducing congestion and improving accessibility by constructing new and improved road connections and transit services
- SP Policy T-1.2. This policy specifies implementing new and alternative truck routes that minimize truck travel in neighborhoods.
- SP Policy CE-1.1. This policy will provide zoning within the Specific Plan area for key services, such as schools, health care facilities, banks, and other finance-related offices. This policy should reduce the distance traveled by residents within the Specific Plan area who would otherwise have to travel out of the area to obtain these key services. Consequently, this policy should reduce emissions from mobile sources.
- SP Policy OS-1.1. This policy will encourage people within the Specific Plan area to use non-motorized, alternative forms of transportation. A Class I bike/pedestrian path system should reduce the amount of traffic within the Specific Plan area and reduce emissions from mobile sources.
- SP Policies T-1.1 and T-1.2. These policies will improve air quality in residential neighborhoods. Reducing congestion and developing alternative routes for heavy-duty vehicles will reduce localized concentrations of criteria pollutants. This is especially significant for diesel particulate emissions because localized concentrations of this pollutant can pose a significant risk to sensitive receptors. Developing road patterns that discourage local truck travel from driving through neighborhoods will reduce the risk of diesel particulate emissions to sensitive receptors.

No project design elements are designed to specifically reduce air quality impacts.

g. Adopted Policies and Regulations that Avoid Air Quality Impacts

(1) Merced General Plan

The SP complies with all of the policies listed in the Merced GP. The following policies found in the Merced GP are designed to minimize air quality impacts.

- GP Policy SD-1.1. Accurately determine and fairly mitigate the local and regional air quality impacts of projects proposed in the City of Merced.
  - 1.1.a Develop uniform standards for mitigating air quality impacts resulting from development.
  - 1.1.b Ensure that significant air quality impacts identified during CEQA review are consistently and fairly mitigated.
  - 1.1.c All air quality mitigation measures should be feasible, implementable, and cost effective.
  - 1.1.d Work with the SJVAPCD to identify regional cumulative transportation and air quality impacts.
  - 1.1.e Reduce the air quality impacts of development projects that may be insignificant by themselves, but cumulatively are significant.
  - 1.1.f Encourage innovative measures to reduce air quality impacts.
- GP Policy SD-1.3. Integrate land use planning, transportation planning, and air quality planning for the most efficient use of public resources and for a healthier environment.
  - 1.3.a The City of Merced will consider air quality when planning the land uses and transportation systems to accommodate the expected growth in this community.
  - 1.3.b Transportation improvement should be consistent with the air quality goals and policies of the General Plan.
  - 1.3.c The City of Merced will consult with transit providers to determine project impacts on long range transit plans and ensure that impacts are mitigated.
- GP Policy SD-1.6. Reduce emissions of PM_{10} and other particulates with local control potential.
  - 1.6.a Work with the SJVAPCD to reduce to the maximum extent feasible particulate emissions from construction, grading, excavation, and demolition.
  - 1.6.b Reduce PM_{10} emissions from City maintained roads to the maximum extent feasible.

(2) San Joaquin Valley Air Pollution Control District

Development under the Specific Plan is subject to a variety of SJVAPCD rules and regulations, including, but not limited to the following.

- APCD Rules 8011-8071(Regulation VIII) include a series of requirements designed to reduce fugitive dust from construction sites, parking and staging areas, open areas, material storage areas, etc. No permits are required under this regulation, but failure

to comply can result in fines and penalties. The APCD typically provides a synopsis describing requirements and exemptions under Regulation VIII when commenting on projects.

- APCD Rule 4103 (Open Burning) regulates the burning of agricultural material when the land use is being converted to a nonagricultural use.

- APCD Rule 4102 (Nuisance) applies to any source operation that emits or may emit air contaminants that create a public nuisance (as defined in the rule).

- APCD Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations) applies to paving operations—the manufacture and use of cutback asphalt, slow cure asphalt, and emulsified asphalt for paving and maintenance operations.

- APCD Rule 4101 (Visible Emissions) prohibits emissions of visible air contaminants to the atmosphere and applies to any source operation that emits or may emit air contaminants.

- APCD Rule 4901 (Residential Wood-Burning) requires new wood stoves sold in the San Joaquin Valley to be USEPA-certified, includes a voluntary curtailment program for poor air quality days, and does not regulate normal fireplaces.

- APCD Rule 4692 (Commercial Charbroiling) regulates chain-driven charbroilers to limit VOC and PM_{10} emissions (e.g. grill charbroilers, flamebroilers, and direct-fired barbecues).

- APCD Rule 4622 (Gasoline Transfer into Vehicle Fuel Tanks) regulates gas stations.

- APCD Rule 9510 (Indirect Source Review) The Indirect Source Review (ISR) Rule is intended to assist the District to meet its commitments in the PM_{10} and O_3 attainment plans, achieve emission reductions from the construction and use of development projects through design features and on-site measures, and provide a mechanism for reducing emissions from the construction and use of development projects through off-site measures. In general, Rule 9510 would require the applicant to (1) submit an Air Impact Assessment (AIA) application no later than applying for a final discretionary approval with the public agency; (2) receive an on-site emission reduction checklist and identify any quantifiable measures that can be implemented to reduce NO_X and/or PM_{10} emissions; (3) submit with the AIA application a monitoring and reporting schedule for on-site emission reduction measures; and (4) pay the District off-site and on-site emission reduction fees to offset NO_X and PM_{10} emissions not reduced.

2. CONSIDERATION AND DISCUSSION OF SIGNIFICANT ENVIRONMENTAL IMPACTS

The following information is provided in accordance with Section 15126.2 of the CEQA Guidelines and the local City of Merced's adopted thresholds of significance specified in the *Merced Vision 2015 General Plan Environmental Impact Report* (Merced Vision 2015 GP EIR) (City of Merced, 1997b). The local thresholds are in addition to those required pursuant to CEQA.

a. Environmental Considerations Suggested in CEQA

Appendix G of the CEQA Guidelines suggests that a development project could have a significant impact on air quality if the project would:

i. Conflict with or obstruct implementation of the applicable air quality plan.

ii. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

iii. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient or air quality standard (including releasing emissions which exceed quantitative thresholds for O_3 precursors).

iv. Expose sensitive receptors to substantial pollutant concentrations.

v. Create objectionable odors affecting a substantial number of people.

b. Rationale for Establishing Local Thresholds

Item (i) of the CEQA environmental thresholds was not adopted for this EIR since the Specific Plan is not expected to conflict with or obstruct implementation of the SJVAPCD air quality plans, including the *Extreme Ozone Attainment Demonstration Plan* adopted by the SJVAPCD in 2004 (SJVAPCD, 2004). All commercial and residential developments within the Specific Plan area are required to comply with the SJVAPCD rules and regulations that were developed and introduced as part of the most recent air quality plans.

Item (ii) of the CEQA environmental thresholds was adopted for this EIR since there is the potential for the Specific Plan to violate stationary source air quality standards or contribute to an existing or projected air quality violation.

Item (iii) of the CEQA environmental thresholds was adopted for this EIR since the Specific Plan will result in a net increase of criteria pollutant emissions for which the project region is non-attainment under an applicable federal or state AAQS (including releasing emissions that exceed quantitative thresholds for O_3 precursors).

Item (iv) of the CEQA environmental thresholds was adopted for this EIR since the project has the potential to expose sensitive receptors to substantial pollutant concentrations. The new developments that are proposed under the Specific Plan are considered by CEQA to be sensitive receptors and, as a result, their location with respect to sources of pollutants was evaluated.

Item (v) of the CEQA environmental thresholds was adopted for this EIR since the project has the potential to expose sensitive receptors to objectionable odors. The new developments that are proposed under the Specific Plan are considered by CEQA to be sensitive receptors and, as a result, their location with respect to sources of odiferous compounds was evaluated.

Consistent with the CEQA Guidelines, the City of Merced, through the adoption of the Merced Vision 2015 GP EIR, adopted several thresholds of significance that are used in determining the South Merced SP's impact on air quality. Adoption of these thresholds allows the City of Merced to provide standards of significance in addition to those provided solely by CEQA. These thresholds are described in detail hereafter.

c. Thresholds of Significance Adopted in This EIR

The City of Merced, as the Lead Agency, used the following significance criteria in the *Vision 2015 General Plan Program EIR*, consistent with CEQA Guidelines, and has determined that potential significant impacts greater than those identified in the General Plan EIR related to air quality will result if:

i. The development under the Specific Plan would result in the emission of more than 10 tons/year of ROG and/or NO_X.

ii. The development under the Specific Plan would result in the emission of more than 15 tons/year of PM_{10}.

iii. The development under the Specific Plan would not comply with regulations found in the 2004 *Extreme Ozone Attainment Demonstration Plan* or the 2006 PM_{10} Plan, adopted by the SJVAPCD (SJVAPCD, 2004; SJVAPCD, 2006).

iv. The development under the Specific Plan would expose sensitive receptors to substantial pollutant concentrations. Pollutant concentrations that lead to a cancer risk greater than or equal to 10 in a million, or a total hazard index (HI) greater than or equal to 1.0, would be considered substantial pollutant concentrations.

d. Regulatory Setting

(1) Air Quality Standards

(a) Federal Clean Air Act

The federal CAA, as amended, directed the USEPA to establish NAAQS for several air pollutants. Primary standards relate to the protection of the public's health and safety; secondary standards relate to the protection of the public from non-health effects.

Following are the air pollutants for which primary NAAQS have been set.

- CO is an odorless gas that is highly toxic; CO is formed by the incomplete combustion of fuels.
- O_3 is formed by a complex series of chemical reactions between ROG, NO_X, and sunlight. ROG and NO_X are known as O_3 precursors.
- PM_{10}, given its small size, can remain airborne for long periods and can be inhaled, passed through the respiratory system, and lodged in the lungs.
- $PM_{2.5}$ is similar to PM_{10}, but smaller. It generally derives from combustion sources.
- NO_2 is a precursor to the formation of O_3. It results from the combustion of fossil fuels.
- SO_2 is formed by the combustion of fuels containing sulfur.
- Lead was a factor when leaded gasoline was available.

(b) California Clean Air Act

Under the California Air Quality Act, the state has adopted primary and secondary CAAQS for air pollutants. The state has adopted AAQS for some pollutants not on the list of NAAQS. Specifically, AAQS have been adopted for sulfates, hydrogen sulfide, and visibility-reducing particulate matter. The NAAQS and CAAQS are typically stated as concentrations of pollutants that cannot be exceeded. Appendix A contains the current NAAQS and CAAQS, with additional explanations regarding the standards. The roles of the various agencies involved in improving air quality are discussed hereafter.

(2) Involved Agencies

The following agencies are responsible for air quality planning in the SJVAB.

Federal

- The USEPA is responsible for defining NAAQS for several pollutants as called for in the federal CAA. The NAAQS are presented in Appendix A. The USEPA is also responsible for reviewing and approving Air Quality Plans developed by local air pollution control districts (APCDs), state Air Quality Plans, and State Implementation Plans (SIPs).

State

- In 1988, the California CAA was passed. CARB has established CAAQS (provided in Appendix A), which are in some instances more stringent than NAAQS. The CARB is the agency responsible for the coordination and oversight of the state and local air

pollution control programs. The CARB has primary responsibility for setting mobile source standards for California, and is implementing a Diesel Risk Reduction Program aimed at reducing exhaust emissions from all diesel vehicles and stationary diesel engines.

Local

- SJVAPCD. The SJVAPCD's jurisdiction encompasses an area that spans seven and one-half counties, from San Joaquin County at the north to Kern County in the southern end of the San Joaquin Valley. The SJVAPCD is the primary regulatory authority responsible for developing and enforcing rules and regulations to control emissions from stationary sources (including area sources, such as construction sites) within the San Joaquin Air Basin, and for developing and implementing air quality attainment plans. The objective of air quality regulation is to attain (and maintain) compliance with the NAAQS and the CAAQS. Stationary sources that have the potential to emit regulated pollutants over the specified thresholds are required to obtain an Authority to Construct (ATC) before construction. These sources must also obtain a Permit to Operate (PTO) before commencing project operations.

- City of Merced. The City regulates land uses through its GP and entitlement process, and coordinates with the SJVAPCD in the review and permitting of land-use projects, including air quality impacts that may be associated with land-use changes, as discussed.

Merced County Association of Governments (MCAG). MCAG acts as the clearinghouse for transportation and other projects within Merced County. MCAG is the Lead Agency for the development and promotion of ride sharing and similar activities related to air quality impacts from transportation. MCAG is also responsible for preparing the Air Quality Conformity Determination for the Regional Transportation Plan.

(3) Air Quality Planning

The federal CAA requires the development of an air quality control plan, referred to as the SIP. The SIP contains strategies and control measures that states will use to attain the NAAQS. States with areas in violation of the NAAQS are required to update their SIPs to incorporate additional control measures to reduce air pollution. The California SIP is periodically modified to reflect the latest emission inventories, planning documents, and rules and regulations of various air basins. The CARB has primary responsibility and produces a major part of the SIP for pollution sources that are statewide in scope; however, it relies on the local air districts to provide emissions inventory data and additional strategies for sources under their jurisdiction. The SIP consists of the emission standards for vehicular sources and consumer products set by the CARB and attainment plans adopted by the local air agencies as approved by CARB. The USEPA reviews the air quality SIPs to verify their conformity with CAA mandates and that they will achieve air quality goals when implemented. If USEPA determines a SIP is inadequate, it may prepare a Federal Implementation Plan (FIP) for the nonattainment area and may impose additional control measures.

The regulatory context and status of air quality programs has been changing rapidly in the last few years. USEPA adopted the 8-hour NAAQS for O_3 in 1997, intending to replace the 1-hour standard. That action, however, was partially overturned by the U.S. Circuit Court of Appeals in 1999. In February 2000, the U.S. Supreme Court determined that the federal CAA did not bar USEPA from implementing the 8-hour standard, as long as USEPA considers the classification scheme in developing the associated regulations. In April of 2004, USEPA issued the final rule revoking the 1-hour standard, which became effective on June 15, 2005.

In response to the SJVAB's nonattainment status for O_3 and PM_{10}, the SJVAPCD has adopted air quality attainment plans as required by state and federal regulations. Table IVA-5 lists and describes the air quality attainment plans and updates that have been adopted by the SJVAPCD. These plans identify various strategies and measures intended to reduce emissions of air pollutants or their precursors. Responsibility for implementing these plans is shared by the SJVAPCD, regional transportation agencies, and cities and counties within the air basin. For the SJVAPCD, implementation is accomplished through the adoption of new rules and regulations, or amendments to existing rules, to impose additional controls on the emission of pollutants from point sources.

TABLE IVA-5

SJVAPCD Air Quality Plans

1991 Air Quality Attainment Plan for the San Joaquin Valley	Establishes the regulatory groundwork for bringing the SJVAB into compliance with the CAAQS for O_3 and CO.
1992 Federal Attainment Plan for Carbon Monoxide	Establishes the regulatory groundwork for bringing the SJVAB into compliance with the NAAQS for CO.
Ozone Attainment Demonstration Plan	Establishes the regulatory groundwork for bringing the SJVAB into compliance with the NAAQS for O_3. This plan also satisfies the required triennial review for the CAAQS.
PM_{10} Attainment Demonstration Plan	Establishes the regulatory groundwork for bringing the SJVAB into compliance with the NAAQS for PM_{10}.
Amended 2002 and 2005 Rate of Progress Plan for San Joaquin Valley Ozone (December 31, 2002)	Updates O_3 data and identifies specific additional controls to be implemented by the SJVAPCD to reduce emissions of O_3 precursors. Identifies measures adopted by Caltrans and regional transportation agencies to help minimize vehicle emissions.
2003 PM_{10} Plan (June 19, 2003)	Updates PM_{10} data and projections and identifies strategies for achieving the NAAQS for PM_{10} at the earliest possible date – 2010.
2004 Proposed Extreme Ozone Attainment Demonstration Plan	Identifies additional controls for O_3 precursors, provides model results to demonstrate progress toward achievement of federal 1-hour standard in 2015. Submitted to USEPA in November 2004.
8-Hour Ozone Demonstration Plan	Under preparation. Submittal due to USEPA in 2007.

(4) Control of Air Pollution

Guided by the overall planning structure already described, specific agencies develop and implement procedures to control and reduce air pollution. Sources of air pollution are typically categorized as:

- "Mobile sources," related to vehicular emissions;
- "Point" or "stationary sources" related to certain industrial or commercial emissions at fixed locations; or
- "Area" or "areawide sources" related to residential, agricultural, and commercial uses that, by themselves, may have low emissions individually but may have considerable emissions when viewed as a whole.

Emissions from motor vehicles are regulated by the USEPA and by the CARB. The USEPA and CARB establish pollutant emission limits for various classes of vehicles. While important in the overall planning for air quality, most of these regulations do not apply directly to land development projects. Emission standards adopted by CARB for off-road (construction) equipment will apply to the grading and construction equipment used for development of the project. Authority for regulating off-road equipment is divided between the CARB and the USEPA. At the federal level, USEPA issued its final rule establishing the latest reductions in NO_X and particulate matter applicable to off-road engines starting in model year 2008 (June 29, 2004, Federal Register 69:124, pages 38957-39006).

Stationary point sources are subject to regulation by the SJVAPCD, based on procedures set forth in its Rules and Regulations. The SJVAPCD has a two-step permit process for stationary sources. First an ATC is issued. Then, after construction and compliance with the conditions of approval in the ATC have been ascertained, a PTO is issued. These permits typically contain requirements related to emission limits, operating parameters, control equipment, monitoring, and reporting.

The SJVAPCD is a "responsible agency" under CEQA when it has discretionary power over a project, but does not have the principal authority to carry out the project. For projects where the SJVAPCD has no direct authority, it acts in a review capacity and is available for consultation by local governments. The SJVAPCD is responsible to notify local/regional planning authorities of potential air pollution sources associated with land-use changes (SJVAPCD Rule 1060).

Residential, commercial, and office uses and their associated vehicle traffic are not regulated directly. Instead, strategies associated with land-use planning, the development of alternate transportation modes, and reduction in energy consumption, are applied to land development projects during their environmental review and approval process. The SJVAPCD (2002) has identified a variety of Reasonably Available Control Measures (RACMs) oriented at reducing pollution in this way. Implementation of identified RACMs is the responsibility of regional transportation agencies and of local governments who must incorporate these measures into their decision-making and project approval processes. The MCAG is the Regional Transportation

Agency for the County. In April 2005, MCAG confirmed that its transportation plan and associated projects resulted in emissions of O_3 precursors that were within the budget or limits incorporated into the *Extreme Ozone Attainment Demonstration Plan* (SJVAPCD, 2004). The primary focus of MCAG is the development of transportation projects to reduce congestion and to promote alternate transportation methods. The City of Merced and other cities are responsible for land-use decisions and measures that help to reduce air emissions through land-use planning.

One area source that is already subject to regulation is fugitive dust associated with grading and construction activities. To reduce emissions of PM_{10} from such operations, the SJVAPCD has adopted Regulation VIII, which applies to all grading and construction projects within the air basin. It is implemented through a series of rules, including Rule 8021, which gives a specific definition of visible dust emissions and requires all operators to use water or other treatments on all exposed earth surfaces and stockpiles to control such emissions. A related rule (8041) also requires the removal of accumulated dirt or mud from public roads ("track out") at least daily.

e. Significant Direct Impacts

Impacts during construction and operation and HAP impacts are described in this subsection.

In general, construction activities generate short-term criteria pollutant emissions, particularly PM_{10} and NO_X. The potential emissions from the proposed construction were calculated and compared with the emission thresholds presented previously. Emissions from construction can be categorized into three sources: fugitive dust from earthmoving activities and traffic on unpaved and paved surfaces; construction equipment exhaust; and employee vehicle exhaust.

(1) Impact AQ-1 (Construction Impact)

Per the SJVAPCD, fugitive dust emissions do not have to be quantified because, for most projects, these emissions can be reduced to less than significant levels through compliance with SJVAPCD Regulation VIII. The list of control measures identified by the SJVAPCD to satisfy Regulation VIII includes the following:

i. All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.

ii. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.

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

iv. With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.

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

vi. All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)

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

viii. Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.

ix. Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

For larger projects or projects that may impact the air quality at a sensitive receptor location (i.e. construction in the vicinity of a school), enhanced and additional fugitive dust control measures can be implemented. Some of the enhanced and additional measures recommended by the SJVAPCD are listed in Mitigation Measure AQ-1.

Compliance with Regulation VIII and Mitigation Measure AQ-1 should reduce fugitive dust emissions to *less than significant* levels.

(2) Impact AQ-2 (Construction Impact)

As the specific size, location, and construction techniques and scheduling that will be used for each individual development project occurring within the South Merced Specific Plan area are not currently known, it is difficult, if not impossible, to precisely estimate the emissions from the construction equipment and construction employee vehicles. A calculation of these emissions would require the City to speculate regarding such potential future projects' potential environmental impacts. The City is not required to engage in such speculation. (CEQA Guidelines, Section 15145.) Therefore, the primary analysis for this program-level EIR is qualitative and is based on construction impacts at other sites. A quantitative analysis was performed to reinforce the qualitative analysis; however, this analysis is based on scheduling assumptions that cannot be verified at this time.

Many of the individual projects that could be developed under the South Merced Specific Plan may be small and thus would not generate construction emissions that exceed the SJVAPCD recommended thresholds of significance. To the extent that construction of these individual

projects overlaps, then the combined emissions from these small, individual projects could exceed the recommended SJVAPCD thresholds for ROG and NO_X (10 tons per year). In addition to the smaller-scale projects, some of the individual development projects could also be large enough to generate construction emissions that exceed the SJVAPCD thresholds. Through the environmental review process, the City will consider these future projects on a case-by-case basis to ascertain whether an individual project would generate potentially significant air quality impacts and, where it is necessary, will require the implementation of mitigation measures to minimize emissions and reduce potentially significant impacts.

If site-specific review of the future development projects occurring within the South Merced Specific Plan identifies potentially significant air quality impacts associated with emissions from construction equipment, Mitigation Measure AQ-2 will be implemented to reduce these emissions. While implementation of Mitigation Measure AQ-2 will reduce construction equipment emissions, it may not reduce these emissions to levels below the SJVAPCD thresholds for each individual development project because the amount of emissions generated for each project will vary depending on its size, the equipment used during construction, and the length of the construction schedule. Under these conditions, no further feasible mitigation measures are available, and this impact will be considered *significant and unavoidable*. The City will make site-specific determinations of significance during the review of these individual development projects when they are submitted for development review to determine which projects will involve construction emissions that may exceed significance thresholds.

For the purpose of analysis in this EIR, a qualitative project-level analysis is provided for all of the single-family residential units. Based on the land-use plans from the South Merced Specific Plan, approximately 3,964 single-family homes will be constructed upon project build-out. The analysis assumes that the construction of the site will be performed over a 7-year period, which is consistent with the City's average growth rate of 2.5%. [URBEMIS does not allow a project duration of more than 5 years for a project starting in 2007. Therefore it is recommended that the figures resulting from a 5-year duration be kept, with the understanding that they are conservative. Additionally, it is very unlikely that extending the plan duration for 2 years will result in NO_X or ROG emissions below the significance threshold. Hence the finding of "significant, short-term impact" would not change with a 7-year duration.] The construction fleet for this construction is based on the SJVAPCD recommended construction fleet calculator. The results from the construction fleet calculator and the URBEMIS2002 results are provided in Appendix A and summarized hereafter.

- Maximum, unmitigated construction exhaust emissions for ROG, NO_X and PM_{10} are approximately 70, 442, and 18 tons per year, respectively.

- With the application of Mitigation Measure AQ-2, maximum construction exhaust emissions for ROG, NO_X and PM_{10} are approximately 70, 354, and 4 tons per year, respectively.

The results suggest that PM_{10} can be reduced below the annual threshold for SJVAPCD. However, ROG and NO_X emissions from the construction equipment will still be above the significance threshold. Therefore, construction emissions for this scenario will be considered to

have a significant, short-term impact on air quality. As previously mentioned, this analysis is based on several scheduling assumptions. It is possible that simultaneous construction in other areas or more intense construction could increase the construction exhaust emissions.

Based on the qualitative analysis and the quantitative analysis performed for the build-out of residential units, it is predicted that the construction equipment emissions will have a *significant, short-term impact* on air quality.

(3) Impact AQ-3 (Operational Impact)

Operational emissions from the South Merced Specific Plan will consist primarily of mobile source emissions and area source emissions (i.e., consumer products, architectural coatings, landscaping activities, etc.). The South Merced Specific Plan contains some key policies that may help reduce the operational emissions from mobile sources. These key policies include the following.

i. Develop a safe pedestrian and bicycle system with routes between open space resources, schools and key destinations in South Merced (Policy OS-1.1).

ii. Reduce congestion and improve accessibility by constructing new and improved road connections (Policy T-1.1).

iii. Implement new and alternative truck routes that minimize truck travel in neighborhoods (Policy T-1.2).

Despite these policies, mobile and area sources are still expected to be the largest source of operational criteria pollutant emissions. Mobile and area source emissions were evaluated using URBEMIS2002 version 8.7). The trip rates for each of the different land uses described in the Project Description of this EIR are provided by the traffic analysis (Chapter IV, Section G). The estimated emissions are summarized in Table IVA-6.

TABLE IVA-6

Operational Emissions
(Tons Per Year)

Source	ROG	NO_X	CO	SO_2	PM_{10}
Mobile Sources	247.31	264.32	2,623.05	1.48	128.82
Natural Gas	2.58	34.72	23.65	0.00	0.06
Hearth	30.40	4.77	243.58	0.79	39.73
Landscaping	2.56	0.09	16.79	0.19	0.07
Consumer Products	58.22	–	–	–	–
Architectural Coatings	33.19	–	–	–	–
Total	**374.26**	**303.90**	**2,907.07**	**2.47**	**168.69**

Source: Emissions calculation was performed with URBEMIS2002. The URBEMIS2002 files incorporate the recommended changes to the URBEMIS default values recommended by the SJVAPCD. Results from URBEMIS 2002 are provided in Appendix A.

The values in Table IVA-6 represent the unmitigated operational emissions. The application of Mitigation Measures AQ-3 and AQ-4 are expected to reduce the operational emissions. Mitigation Measure AQ-3 lists energy efficient design guides that may be applied to reduce area source emissions. Mitigation Measure AQ-4 lists some project policies that could reduce the mobile sources generated by the project operations. However, the extent to which Mitigation Measures AQ-3 and AQ-4 are applied cannot be determined at this time. Therefore, the mitigated emissions were not calculated, and operational emissions are considered to have a *significant and unavoidable impact* on air quality.

(4) Impact AQ-4 (Operational Impact)

At present, all areas within the SJVAPCD have attained the federal CO standard and are attainment or unclassified for the state CO standard. However, localized CO concentrations may exceed the concentrations monitored by local monitoring stations and could pose a significant risk to sensitive receptors. Given that increased CO concentrations usually are associated with roadways that are congested and with heavy traffic volume, the SJVAPCD has established that preliminary screening can be used to determine with fair certainty that the effect a project has on any given intersection will not cause a potential CO hot spot. Therefore, the SJVAPCD has established that if neither of the following criteria is met at all intersections affected by the developmental project, the project can be said to have no potential to cause a violation of the CO standard:

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

ii. A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at more intersections in the project vicinity.

The SJVAPCD recommends that if either of these criteria can be associated with any intersection affected by the project, the applicant/consultant will have to conduct a CO Protocol Analysis to determine significance.

The Merced GP EIR also requires projects in the City of Merced to perform the appropriate CO hot-spot air quality studies. The GP EIR states that under “worst-case” conditions, the CO concentrations may exceed the CAAQS. Based on this finding, the GP EIR proposes a mitigation measure that will require projects that will reduce the LOS below D to perform appropriate CO air quality studies (CALINE or equivalent).

As the predicted LOS for the intersections within the South Merced Specific Plan area are not currently known, it is difficult, if not impossible, to precisely estimate the localized CO concentrations by following the CO Protocol Analysis recommended by the SJVAPCD. Instead, a screening-level method developed by the Bay Area Air Quality Management District (BAAQMD) was used to predict the worst-case CO concentration. The CO protocol will be used to evaluate local CO concentrations during the project-specific analysis.

The existing traffic conditions indicate that the intersection of SR 59 and Childs Avenue is operating at LOS F, which is the worst LOS in the South Merced Specific Plan area. The impact of the proposed project on localized CO concentrations was analyzed with the BAAQMD screening method. This method uses vehicle emission factor data from the CARB-recommended emission factor model, EMFAC2007, and daily vehicle volumes from the transportation study (Chapter IV, Section G). The results of the screening analysis indicate that with the proposed project, the maximum 1-hour and 8-hour CO concentrations would be 5.7 and 3.2 ppm, respectively. These values are below the NAAQS and CAAQS; therefore, this method predicts that localized CO concentrations from the South Merced Specific Plan are not expected to have a significant impact on air quality. Per the GP EIR, site-specific development proposals within the Specific Plan area that are expected to reduce road segments or intersection LOS below D will have to perform the appropriate CO air quality studies. At that time, it is expected that predicted LOS will be known and there will be sufficient information to perform a CO study that follows the Transportation Project-Level Carbon Monoxide Protocol that was developed for the California Department of Transportation (Caltrans) on December 1997 (Caltrans, 1997).

Therefore, it is not possible to estimate the level of significance for localized CO emission levels.

(5) Impact AQ-5 (Operational Impact)

The SJVAPCD limits emissions of, and public exposure to, HAPs through several programs and regulations. Stationary sources within the South Merced Specific Plan will comply with all of the SJVAPCD regulations to limit HAP emissions. Some of the programs and regulations are briefly described hereafter.

Regulations II, Rule 2201: Rule 2201 establishes requirements for new or modified sources. These requirements include the use of best available control technology (BACT) on sources that have the potential to emit 2 or more pounds of any criteria pollutant. Rule 2201 also requires that new or modified sources obtain a permit to operate from the SJVAPCD. As part of the permitting process, the SJVAPCD performs a hot spot analysis. This analysis evaluates whether the proposed source should be classified as a high-risk facility. High-risk facilities have emission sources that cause a cancer risk greater than or equal to 10 in a million, or a total HI greater than or equal to 1.0, at a sensitive receptor. High-risk facilities are required to install Toxic Best Available Control Technology (TBACT) to reduce risks to below significance. If a significant impact remains after TBACT is implemented, the permit may not be issued unless it meets the discretionary approval criteria of the SJVAPCD Risk Management Policy for Permitting New and Modified Sources.

Regulation VII: This regulation was developed to limit the emissions of several different HAPs from several processes.

Projects within the South Merced Specific Plan that involve the construction of potential sensitive receptors will also have to consult with the SJVAPCD. These projects will be required to determine whether there are any high-risk facilities within the project vicinity that could expose the sensitive receptor to a significant cancer risk (greater than or equal to 10 in a million) or a significant HI (greater than or equal to 1.0). In addition, the Specific Plan Policy T-1.2

implements road patterns that keep local truck travel from industrially zoned lands out of residential neighborhoods. This should reduce exposure of diesel particulate matter from heavy-duty trucks at potentially sensitive receptor locations.

By complying with the SJVAPCD rules and regulations, stationary sources generated as part of the South Merced Specific Plan will not be considered to pose a significant risk. Similarly, working with the SJVAPCD AB-2588 ("Hot Spot") program and implementation of South Merced Specific Plan Policy T-1.2 should prevent sensitive receptors from being exposed to significant cancer risks or HI values. Therefore, the South Merced Specific Plan is not likely to expose sensitive receptors to substantial pollutant concentrations. The HAP emissions from the South Merced Specific Plan are considered to have a *less than significant* impact on air quality.

f. Significant Cumulative Impacts

Build out of the South Merced Specific Plan will convert agricultural lands into lands for non-agricultural use. As a result, the Specific Plan will increase the number of area and mobile pollutant sources in the San Joaquin Valley Air Basin. Therefore, the impact from the South Merced Specific Plan is considered to be significant.

The EPA has designated the SJVAB as being in nonattainment of the federal O_3 and PM_{10} standards. Therefore, the cumulative impacts are considered to be significant and unavoidable. This is consistent with the findings of the General Plan EIR, which indicated that regional cumulative growth impacts would result in significant impacts on air quality.

3. MITIGATION MEASURES ADOPTED TO MINIMIZE SIGNIFICANT EFFECTS

The following information is provided in accordance with Section 15126.4 of the CEQA Guidelines.

a. Measures that Mitigate Direct Impacts

(1) Mitigation Measure AQ-1

Fugitive dust emissions will be reduced at large sites or projects that may adversely impact the air quality at sensitive receptors by requiring enhanced and additional fugitive dust control measures recommended and enforced by the SJVAPCD.

In those cases, the developer of subsequent projects shall provide written construction specifications to the grading contractors and shall ensure that the following techniques where recommended are applied to grading operations. Enhanced or additional control measures may include, but are not limited to the following:

i. Limit traffic speeds on unpaved roads to 15 mph;

ii. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent;

iii. Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site;

iv. Install wind breaks at windward side(s) of construction areas;

v. Suspend excavation and grading activity when winds exceed 20 mph; and

vi. Limit area subject to excavation, grading, and other construction activity at any one time.

(2) Mitigation Measure AQ-2

NO_X and ROG construction equipment emissions from construction sites will be reduced by complying with construction vehicle air pollutant control strategies developed, recommended and enforced by the SJVAPCD. Contractors will be required to list the recommended emission reducing strategies on construction contracts or other forms acceptable to the SJVAPCD. Such strategies may include the following requirements or measures shown to be equally effective:

i. Use of alternative fueled or catalyst-equipped diesel construction equipment;

ii. Minimize idling time (e.g., 10 minute maximum);

iii. Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use;

iv. Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set);

v. Curtail construction during periods of high ambient pollutant concentrations (this may include ceasing construction activity during the peak-hour of vehicular traffic on adjacent roadways); and

vi. Implement activity management (e.g., rescheduling activities to reduce short-term impacts).

(3) Mitigation Measure AQ-3

Criteria pollutant emissions will be reduced by encouraging projects within the South Merced Specific Plan to include energy efficient features.

Mitigation Measure AQ-3 applies to area sources within the Specific Plan area. Project applicants must, prior to review of the Project by the City Planning Commission, select those measures from the list below that will be incorporated in their development project, and describe to the City how and when they will be implemented. The developer shall ensure implementation and full compliance of those mitigation measures:

i. Install EPA Energy Star (high reflectance) roofing materials to reduce building heat absorption and summer energy costs;

ii. Position structures in a predominantly North-South face and plant low-emitting shade tree and bush species near structures in such an arrangement to shade and cool structures during warmer seasons yet allow for solar heating and wind breaks during cooler months;

iii. Use reflective street, parking lot, and driveway paving materials, such as Portland concrete, or apply reflective coatings;

iv. Provide grass paving or reflective surface for unshaded parking lot areas, driveways, or fire lanes that reduce standard asphalt paving by 10% or more;

v. Landscape with native drought-resistant species (plants, trees, and bushes) to reduce the demand for gas-powered landscape maintenance equipment;

vi. Provide heating systems powered by electricity, natural gas, or propane to serve as the primary heating source;

vii. If wood fuel will be used to heat residential units, only USEPA-Certified Phase II wood-burning stoves will be installed;

viii. Incorporate passive solar space heating designs and solar water heaters into residential and commercial units;

ix. Install low NO_X, energy-efficient heating and other appliances, such as water heaters, cooking equipment, refrigerators, furnaces, and boiler units;

x. Install a gas outlet for use with outdoor cooking appliances, such as a gas barbecue. Install a gas outlet in any proposed fireplaces, including outdoor recreational fireplaces or pits;

xi. Electrical outlets should be installed on the exterior walls of all residential and commercial buildings to promote the use of electric or battery-operated yard and landscaping equipment;

xii. Prohibit gas-powered landscape maintenance equipment within the development; and

xiii. Require that landscape maintenance companies use battery-powered or electric equipment.

b. Measures that Mitigate Cumulative Impacts

All of the measures that mitigate direct impacts also reduce the cumulative impacts. There are no additional mitigation measures that would only address regional emissions from sources that are not within the South Merced Specific Plan. Offset requirements from Stationary Source Rule 2201 and Indirect Source Rule 9510 will reduce cumulative impacts but are not considered mitigation measures, as they are a requirement set by the SJVAPCD.

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B. BIOLOGICAL RESOURCES

This section describes how development associated with the South Merced Specific Plan may have the potential to impact or affect biological resources. This section of the EIR is the first tier of a multi-level environmental review and analysis process that programmatically analyzes the general biological elements contained in the South Merced Specific Plan, which is not a specific development proposal. Rather, the South Merced Specific Plan establishes an overall policy framework that the City of Merced will use as a means of evaluating subsequent development applications such as annexations, rezones and conditional use permits. To that end, this section of the EIR focuses on the broad policy implications of implementing the South Merced Specific Plan as a whole.

The South Merced Specific Plan study area may include sensitive riparian areas, Clean Water Act (CWA) and California Fish and Game Code 1600 (et seq.) jurisdictional features, and important landscape linkages in Merced County. Such linkages may facilitate the movement and dispersal of local, state, and federally protected wildlife and plant species, and may connect blocks of natural open space essential for long-term plant/wildlife viability regionally. As a result, specific portions of the South Merced Specific Plan study area will require subsequent projects to include surveys and implement specific mitigation programs to avoid, minimize, and compensate for adverse impacts to the following biological resources: protected wildlife/plant species, sensitive riparian or important landscape linkages, and CWA/California Fish and Game Code 1600 (et seq.) jurisdictional features. Approval of all projects by the City of Merced is dependent upon the completion of all such analyses.

For the purposes of this analysis, biological resources include the plants, wildlife, and habitats that occur, or have the potential to occur, within the 2,052-acre Specific Plan study area. In addition, this section focuses on potential significant effects on local, state, and federally protected plant and animal species, their habitats, and other special aquatic resources. Where the potential for significant impacts is identified, measures are presented to avoid, minimize, and mitigate impacts to the maximum extent practicable. The information contained in this EIR section only includes summarized technical data, maps, and similar relevant information to facilitate a public review of the significant environmental consequences of the implementation of the South Merced Specific Plan. Placement of highly technical data and specialized analysis in the body of this EIR section has been avoided through the use of a Biological Technical Report (BTR), provided in Appendix B. The BTR includes the methods and results of faunal and floristic surveys, as well as a semi-quantitative assessment of the study area's potential CWA and California Fish and Game Code 1600 (et seq.) jurisdictional features. For ease of review, BTR Figures 1 through 4 are reproduced in this section as Figures IVB-1 through IVB-4, respectively.

1. ENVIRONMENTAL SETTING

The following information is provided in accordance with Section 15125 of the CEQA Guidelines.

a. Study Area for Direct Impacts

The South Merced Specific Plan study area comprises 2,052 acres and is located in the City of Merced, Merced County, California (Figure IVB-1). The study area is located within the confines of four United States Geological Survey (USGS) 7.5-minute quadrangles, including Atwater, El Nido, Merced, and Sandy Mush. For the purpose of this document, the study area is defined as the potential South Merced Specific Plan area. The study area is bounded on the north by Childs Avenue, by SR 99 on the east, by Mission Avenue/Dickenson Ferry Road on the south, and by West Avenue and the Merced Airport on the west (Figure IVB-2). The land use within the study area is primarily agricultural, although sizeable amounts of land are already developed with urban uses, notably in the area on both sides of SR 59. In addition to active and inactive agricultural fields, land uses associated with the study area include irrigation canals (Hartley Lateral and Zentner Lateral), residential tract homes, scattered residential dwellings, and miscellaneous ancillary structures associated with farming. There are no natural streams, creeks or sloughs within the planning area. Irrigation ditches and canals are predominantly either soft bottomed or concrete lined, with most vegetation removed through regular maintenance.

b. Surrounding Area

The study area is located on the eastern side of the San Joaquin Valley. Land use adjacent to the study area is primarily agricultural (including orchards, dairies, fallow properties, and crops), with residential and commercial enterprises generally in the vicinity of Childs Avenue and SR 59. Regional habitat types, some of which do not exist in the planning area, include annual grasslands, irrigated pasture and croplands, oak woodlands, vernal pool and swale complexes, seasonal seeps and marshes, stock ponds, riparian forest and scrub, perennial streams, and scattered areas of ruderal vegetation. The aforementioned habitat types provide a diverse setting for plants and animals within the region, as well as important landscape linkages in Merced County. Linkages facilitate the movement and dispersal of substantial numbers of wildlife and plant species and connect large blocks of natural open space essential for long-term plant and wildlife viability regionally.

c. Study Area for Cumulative Impacts

Merced County will be the study area for cumulative impacts. This area was selected as the cumulative impacts study area because of the number of projects affecting biological resources within the County.

d. Methods

The following methods were used to evaluate on-site-habitat conditions and the presence of CWA and California Fish and Game Code 1600 (et seq.) jurisdictional features and to determine the potential for occurrence of local, state, and federally protected (i.e., special-status[1]) wildlife and plants within the study area limits.

[1] For the purposes if this analysis, the term “special-status” excludes those avian species identified under Section 10 of the Migratory Bird Treaty Act.

Before beginning the field surveys, available information was reviewed from resource management plans and other documents to determine the locations and types of biological resources that could exist in the study area (CDFG, 2006a, b, and c; the California Native Plant Society, 2006). A formal literature review of the CDFG-maintained 2006 California Natural Diversity Database (CNDDB) (CDFG, 2006c) also was conducted for records of local, state, and federally protected special-status species and habitats. The USGS 7.5-minute topographic quadrangle maps queried included: Atwater, El Nido, Merced, and Sandy Mush. The California Native Plant Society Electronic Inventory (CNPSEI) of rare and endangered plants also was queried for the same quadrangles. Species lists generated from analyses were refined based on literature reviews, consultations with resource specialists, and field surveys of the study area. Lastly, topographic and USGS maps were examined to field check the locations of potential areas of CWA and California Fish and Game Code 1600 (et seq.) jurisdiction.

General vegetation and wildlife community surveys, as well as potential CWA and CDFG jurisdictional feature identification surveys, were conducted on November 29 and 30, 2006, by URS wildlife biologist and wetlands scientist Paul Brenner and botanist Ken McDonald. Areas potentially suspected of being CWA or CDFG jurisdictional features were evaluated visually in the field by determining the presence of definable channels and hydrophytic vegetation and by noting the hydrologic regime.

Furthermore, the area surveyed varied, depending on the wildlife and plant species being evaluated. Botanical assessments were limited to the South Merced Specific Plan Area, while evaluations of noise-sensitive birds (e.g., passerines and raptors) extended out 304.8 meters (m) (1,000 feet) from the study area's footprint. Where access to the entire study area was not possible as a result of private property or physical barriers, observations were made from the nearest appropriate vantage points with binoculars or on aerial photographs to document and verify the presence or absence of individual wildlife and plant species or their habitats. Driving and pedestrian reconnaissance surveys were performed to qualitatively assess community characteristics and species present in different habitat types. All representative habitats surveyed were assessed for native habitat, potential to support local, state, and federal special-status wildlife or plant species, special aquatic features, and distributions of varying vegetation communities.

The presence of a wildlife species was determined based on direct observation, wildlife sign (i.e., tracks, burrows, nests, scat, etc.), or vocalization. During wildlife surveys, biologists noted the species observed, scientific name, common name, habitat, and evidence of presence (in the absence of direct observations). Wildlife nomenclature, common names, and habitat information follow Hall (1981), Ingles (1965), Jennings and Hayes (1994), Alsop (2001), Sibley (2000), and Stebbins (1985).

Vegetation classifications of plant communities in the study area were derived from the criteria and definitions of Holland (1986). Surveys noted general vegetation types, species present within different communities and habitat types, and plant population sizes. Scientific and common botanical species names were recorded according to *The Jepson Manual: Higher Plants of California* (Hickman, 1993). Plants were identified to the lowest taxonomic level sufficient to determine whether plant species were non-native, common, or special status. Plants of uncertain

identity were collected and subsequently identified from dichotomous keys, Hickman (1993), and Munz (1974), and descriptions were provided using the nomenclature of Hickman (1993).

e. Existing Physical Conditions in the Study Area

The study area is relatively flat and has been used extensively as agricultural cropland (see Figure IVB-3 and Figure IVB-4, Photograph 2). Elevations range from approximately 150 to 175 feet and gently slope toward the west. Habitats within the study area have the potential to support common and special-status plants and animals, while serving as a marginal landscape linkage between open space areas within the study area and to the south. Lists of observed plant and animal species are provided in the BTR (Tables 2 and 3 of Appendix B, respectively). As noted in the description of surrounding areas, linkages facilitate the movement and dispersal of substantial numbers wildlife and plant species, and connect large blocks of undeveloped land essential for long-term plant and wildlife viability regionally. Although the study area and surrounding lands contain suitable habitat for native species, much of the area has been subjected to anthropogenic influences. For example, conversion of fertile lands to agricultural, residential, and commercial land uses appears to have altered the local landscape through removal of trees and native vegetation, the introduction of nonnative species, and modification of natural watercourses. In addition, the conversion of northern and eastern surrounding areas to residential uses limits the importance of the study area as a regional landscape linkage for Merced County.

In certain parts of the study area, open-space areas, including fallow agricultural lands, have begun the process of reverting to vernal marshes. Calculations of biological acreages are based on plats reflecting acreages within a specific parcel and should be used conceptually not as definitive numbers. Such acreages are shown as follows. Descriptions of land-use and vegetation-community designations are provided in the BTR (Appendix B).

Agriculture	
Agriculture	690.9 acres
Dairy Farm	69.7 acres
Orchard	116.6 acres
Total	**877.2 acres**
Fallow Agriculture	**70.6 acres**
Vernal Marsh	**73.1 acres**
Riparian	**0.7 acre**
Developed	**1,030.4 acres**
Total	**2,052.0 acres**

The site contains numerous agricultural ditches and canals (see Figure IVB-4, Photographs 6 and 7), most of which are well maintained and devoid of riparian and wetland vegetation. The agricultural canals/ditches depicted on the USGS quadrangle maps were evaluated using aerial photographs and ground reconnaissance during the site survey on November 29 and 30, 2006. These canals/ditches were determined to be present and mostly accurate. Consequently, the USGS agricultural canals are depicted on Figure IVB-3. In a few instances, some agricultural fields have been left untilled, and wetland-marsh plant species have appeared within these areas (often adjacent to canals and ditches). For example, an approximately 9-acre parcel consisting of

hydrophytic vegetation is in the west central portion of the study area; it is bordered by Tyler Road on the east and Cone Avenue on the north (see Figure IVB-3 and Figure IVB-4, Photograph 1). These ditches and canals are predominantly either soft bottomed or concrete lined with associated marginal riparian or wetland vegetation (see Figure IVB-4, Photograph 6). For example, a small drainage ditch at the terminus of Mather Road has not been maintained and currently supports riparian habitat consisting primarily of cottonwood trees (*Populus* sp.).

(1) Special-Status Plants

Sixteen special-status plant species were reported in the aforementioned review to have the potential to occur within the Atwater, El Nido, Merced, and Sandy Mush USGS quadrangles, which included all portions of the study area. (A discussion of each special-status plant species is presented in Appendix B, Table 4.) Based on literature reviews and field surveys, it was determined that two of the special-status plant species are likely to be absent from the study area because of elevation-range restrictions. Ten species have a low potential for occurrence because their distribution is restricted by substantive habitat requirements that are negligible within the study area. In these cases, no further survey or study is obligatory to determine the likely presence or absence of these species.

Four species were determined to have a moderate potential for occurrence because of the presence of substantive habitat requirements, which marginally or mostly occur within the study area. However, no special-status plant species were observed within the study area during the survey. When special-status species are determined to have a moderate potential for occurrence within the study area, subsequent projects are obligated, in certain circumstances, to conduct surveys and implement specific avoidance, minimization, and mitigation measures to compensate for adverse impacts. These measures apply to the following plant species.

- Succulent owl's-clover (Castilleja campestris ssp. succulenta)
- Colusa grass (Neostapfia colusana)
- San Joaquin Valley orcutt grass (*Orcuttia inaequalis*)
- Hairy Orcutt grass (*Orcuttia pilosa*)

(2) Special-Status Wildlife Species

Fifteen special-status wildlife species were reported in the above-referenced review, and two species (golden eagle and northern harrier) that were not reported in the CNDDB were included. In total, 17 local, state, and federally protected wildlife species were considered for their potential to occur within the study area. (See Appendix B, Table 5 for a detailed list.) Based on field surveys, literature review, and species specialist’s informal consultation, four species were considered to be absent because suitable habitat is lacking. Three species were found to have a low potential to occur within the study area because of a restrictive distribution and substantive habitat requirements that are negligible within the study area. As a result, no further survey or study is obligatory to determine the likely presence or absence of these species within the study area.

Eight species were found to have a moderate potential to occur within the study area. The moderate potential for occurrence designation is used when species distributions are restricted by substantive habitat requirements, which partly or mostly occur within the study area. Two raptors, including one designated as a California species of special concern (northern harrier and burrowing owl) were observed during field surveys conducted within the study area. Consequently, specific portions of the study area have the potential to support local, state, and federally protected species. Any special-status species with a high, moderate, or present potential for occurrence within the study area obligates, in certain circumstances, subsequent projects to conduct surveys and implement specific avoidance, minimization, and mitigation measures to compensate for adverse impacts. These measures apply to the following wildlife species:

- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Midvalley fairy shrimp (*Branchinecta mesovallensis*)
- Vernal pool tadpole shrimp (*Lepidurus packardi*)
- California linderiella (*Linderiella occidentalis*)
- Giant garter snake (*Thamnophis gigas*)
- Tricolored blackbird (*Agelaius tricolor*)
- Burrowing owl (*Athene cunicularia*)
- Golden eagle (*Aquila chrysaetos*)
- Swainson's hawk (*Buteo swainsoni*)
- Northern harrier (*Circus cyaneus*)

f. Project Design Elements that Avoid Biological Resources Impacts

There are no project design elements that avoid impacts to biological resources. However, upon identification of sensitive biological areas, the City of Merced may consider zoning sensitive areas as open space or consider protecting these resources through other regulatory processes pursuant to the *Merced Vision 2015 General Plan*, Policies OS-1.1 and OS-1.2.

g. Adopted Policies and Regulations that Minimize Biological Resources Impacts

As a means of avoiding, minimizing, and compensating for adverse impacts to biological resources within the study area, compliance implementation guidance for the following regulatory policies is provided.

(1) Migratory Bird Treaty Act and California Fish and Game Code 3500 (et seq.)

To comply with the Migratory Bird Treaty Act (MBTA) and relevant sections of the California Fish and Game Code (e.g., 3503, 3503.4, 3504, 3505, and so forth), prior to ground disturbing activities or development within the study area, a qualified biologist will conduct and submit a migratory nesting bird and raptor survey report. A qualified biologist is an individual with sufficient education and field experience in local California ecology and biology to adequately identify local plant and wildlife species. The survey will occur not more than 72 hours before initiating development activities, and any occupied passerine and/or raptor nests occurring within or adjacent to the study area will be delineated. To the maximum extent practicable, a minimum

buffer zone from occupied nests will be maintained during physical ground-disturbing activities. Once nesting has been determined to cease, the buffer may be removed.

(2) CWA and California Fish and Game Code 1600 (et seq.)

Prior to undertaking ground-disturbing activities or development within or adjacent to any potential CWA and California Fish and Game Code 1600 (et seq.) jurisdictional features (e.g., wetlands, Waters of the United States, Waters of the State, sensitive riparian areas, and so forth) within the study area, the Applicant will consult with the appropriate responsible local, state, and federal agencies to secure all obligatory discretionary permits and authorization.

(3) Federal and State Endangered Species Acts

Pursuant to state and federal Endangered Species Act (ESA) requirements, if protected species are detected within or immediately adjacent to ground-disturbing activities or development, the Applicant will redirect or halt activities and consult with CDFG, United States Fish and Wildlife Service (USFWS), or other responsible agency. To that end, encounters with federal and state ESA-protected species will be reported to the appropriate regulatory agency. In doing so, the following information will be recorded to the maximum extent practical: (1) species name, (2) location (narrative and maps) and dates of observations, (3) general condition and health, including injuries and state of healing, (4) diagnostic markings, including identification numbers or markers, and (5) locations moved from and to (if applicable). Furthermore, upon encountering a dead or injured state or federally protected species, the applicant will notify USFWS and/or the appropriate state wildlife agency. Written notification will be made within 15 days of the date of the finding or incident (if known) and will include: (1) location of the carcass, (2) a photograph, (3) cause of death (if known), and (4) other pertinent information.

(4) *Merced Vision 2015 General Plan* Policies

Policy OS-1.1: Identify and preserve wildlife habitats that support rare, endangered, or threatened species.

Policy OS-1.2: Preserve and enhance creeks in their natural state throughout the Planning Area.

2. CONSIDERATION AND DISCUSSION OF SIGNIFICANT ENVIRONMENTAL IMPACTS

The following information is provided in accordance with Section 15126.2 of the CEQA Guidelines and the local City of Merced's adopted thresholds of significance specified in the Merced Vision 2015 GP EIR. The local thresholds are in addition to those required pursuant to CEQA.

a. Environmental Considerations Suggested in CEQA

Appendix G of the CEQA Guidelines suggests that a development project could have a significant impact on biological resources if the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS.

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

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

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

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

b. Rationale for Establishing Local Thresholds

Since local, state, and federal protected biological resources exist on the project site, specific thresholds have been developed to focus on site-specific issues. Refinement of thresholds will allow for greater detail than standard CEQA significance thresholds alone.

c. Thresholds of Significance Adopted in This EIR

The City of Merced, as the Lead Agency, used the following significance criteria in the Merced Vision 2015 General Plan Program EIR, consistent with CEQA Guidelines, and has determined that potential significant impacts greater than those identified in the GP EIR related to biological resources will result if:

- The Specific Plan would result in the direct or indirect displacement of substantial amounts (10 acres or more) of biologically sensitive land, such as wetlands, permanent marshes, riparian habitats, vernal pools, and oak woodlands.

- The Specific Plan would result in the interference with the movement of wildlife species or established wildlife corridors that may exist in the Plan area.

- The Specific Plan would conflict with the *Merced Vision 2015 General Plan* policies OS-1.1 and OS-1.2.

d. Regulatory Setting

The following is a brief summary of the regulatory context under which most biological resources are managed at the federal, state, and local level.

(1) Federal Endangered Species Act

Under the Federal Endangered Species Act (FESA), the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as threatened or endangered (16 United States Code [USC] 1533[c]). FESA defines "endangered" species as any species in danger of extinction throughout all or a significant portion of its range. A "threatened" species is any species that is likely to become an "endangered" species within the foreseeable future throughout all or a significant portion of its range. Additional special-status species include "candidate" species and "species of concern." "Candidate" species are those for which the USFWS has enough information on file to propose listing as endangered or threatened. "Species of concern" are those for which listing is possibly appropriate but for which the USFWS lacks sufficient information to support a listing proposal. A species that has been "delisted" is one whose population has met its recovery goal target and is no longer in danger of extinction. The USFWS administers the FESA (16 USC Section 153, et seq.) and thereby has jurisdiction over federally listed threatened, endangered, and proposed species. Projects that may result in "take" of a listed species must consult with the USFWS or National Marine Fisheries Service (NMFS). Take is defined by FESA to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Pursuant to the requirements of CEQA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed threatened or endangered species, or species proposed for listing, may be present in the vicinity of the proposed project area.

(2) Clean Water Act (CWA)

Pursuant to the provision regulated by the United States Army Corps of Engineers (USACE) and Regional Water Quality Control Board (RWQCB), a permit is required for any filling or dredging within Waters of the United States, including intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, and natural ponds, among other special aquatic sites (Code of Federal Regulations [CFR] 33 Part 328). The CWA Section 404 and 401 permit review processes require a jurisdictional delineation and an assessment of potential adverse impacts on Waters of the United States prior to permit issuance. Furthermore, some categories of impacts require compensatory mitigation for effects to jurisdictional features.

(3) Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act

The MBTA regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50 CFR Section 10.13. This Act implements an International Treaty for the Conservation and Management of Bird Species that may migrate through more than one country. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50 CFR 20. The MBTA was amended in 1972 to include protection for migratory birds of prey (i.e.,

raptors). The Bald and Golden Eagle Protection Acts prohibit the take or commerce associated with these species. The USFWS administers both the Bald and Golden Eagle Protection Acts and reviews federal agency actions that may affect species protected by the acts (USFWS, 2002).

(4) California Environmental Quality Act Guidelines

CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the FESA and the section of the California Fish and Game Code dealing with Rare or Endangered plants and animals. Section 15380(b) allows a public agency to undertake a review to determine whether a significant effect on species that have not yet been listed by either the USFWS or CDFG (i.e., candidate species) would occur. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

(5) California Endangered Species Act (CESA)

CDFG administers the California Endangered Species Act (CESA) of 1984 (Fish and Game Code Section 2080), which regulates the listing and "take" of endangered and threatened species. In addition, the CDFG has the responsibility for maintaining lists of threatened and endangered species (California Fish and Game Code, 2070). CDFG also maintains a list of "candidate species" that are formally being considered for addition to the lists. Pursuant to the requirements of CEQA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the Project area and whether the proposed project would have a potentially significant effect on such species. In addition, the CDFG encourages informal consultation on any proposed project that may affect a candidate species. Title 14, Section 670.5, of the California Code of Regulations (CCR) lists animal species considered endangered and threatened by the state. Section 2080 of CESA prohibits the taking of any endangered or threatened species. Under CESA, "take" means "hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture, or kill." Section 2081 of CESA permits individuals to take endangered or threatened species provided that: (1) the take is incidental to an otherwise lawful activity, (2) the impacts of the authorized take are minimized and fully mitigated, (3) the take permit is consistent with the CDFG recovery program, (4) the applicant ensures adequate funding to implement the mitigation and monitoring program, and (5) the action will not jeopardize the continued existence of the species.

(6) California Native Plant Protection Act

The Native Plant Protection Act (California Fish and Game Code, 1900-1913) prohibits the taking, possessing, or sale within the state of any rare, threatened or endangered plant as defined by CDFG, except as authorized by law and regulation. This applies to any plant with a state designation of Rare, Threatened, or Endangered.

(7) California Fish and Game Code

The California Fish and Game Code contains sections that prohibit taking or possessing state-designated, fully protected species of birds, mammals, fish, amphibians, and reptiles. Code Section 1600 (et seq.) identifies provisions of the California Fish and Game Code that require a project proponent to notify CDFG of any proposed alteration of the bed, bank, or channel of streams and rivers. Under 1601 and 1603, an applicant must obtain a streambed alteration agreement from CDFG for authorization to conduct work within the bed, channel, or bank of any river, stream, or lake designated by the CDFG. Its intent is to protect streambed habitats important to fish and wildlife. In the course of this notification process, CDFG may then place conditions on a project to address the potentially significant adverse impacts within CDFG jurisdictional limits.

(8) California Wetlands Conservation Policy

Executive Order W-59-93, issued by former Governor Pete Wilson on August 23, 1993, and known as the California Wetlands Conservation Policy, established policies and strategies that would ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of California wetlands. It further reduced procedural complexity in the administration of state and federal wetlands conservation plans and encouraged partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetlands conservation and restoration. The Policy also included a regional implementation strategy for the Central Valley that expresses the state's formal support for the Central Valley Habitat Joint Venture program and funding of financial incentive programs.

e. Significant Direct Impacts

The South Merced Specific Plan will not, in and of itself, result in adverse effects on biological resources. However, implementation of the Specific Plan in subsequent foreseeable specific development projects will have the potential to adversely affect biological resources. Therefore, the potential effects of implementing the Specific Plan are enumerated and discussed as follows.

(1) Impact BIO-1

Sensitive Biological Lands. Implementation of the Specific Plan could result in the permanent and/or temporary loss of substantial amounts (defined as 10 acres or more by the City of Merced) of wetlands, permanent marshes, riparian habitats, vernal pools, and oak woodlands. *This impact can be fully mitigated through the adoption of certain mitigation measures presented below.*

Discussion

Field surveys of the study area identified the presence of biologically sensitive lands, including approximately 73 acres of vernal marsh and 9.7 acres of riparian habitat (Figure IVB-3). The majority of these lands have been altered over time by cattle grazing, agriculture, and the introduction of nonnative species, such as annual grasses. Despite the anticipated use of avoidance and minimization efforts to limit adverse impacts, development activities of

foreseeable subsequent projects will result in the displacement of substantial amounts (i.e., greater than 10 acres) of biologically sensitive land.

(2) Impact BIO-2

Special-Status Species. Implementation of the Specific Plan could have an adverse effect on special-status species (e.g., mortality, destruction, etc.) and result in the loss of breeding, foraging, dispersal, and refuge habitats as a result of development and ground disturbing activities. *This impact can be fully mitigated through the adoption of certain mitigation measures presented below.*

Discussion

Literature reviews and field surveys indicated that the study area includes habitats that have the potential to support special-status plant and animal species (listed above in Section 1e). In support of this assertion, two special-status species were observed within the study area (western burrowing owl, two individuals, and northern harrier, one individual). Furthermore, the following vegetation-community types may serve as suitable habitats for special-status species: vernal marshes, riparian habitats, fallow agricultural lands, and, to a lesser extent agricultural lands, including orchards. The conversion of undeveloped and agricultural lands to residential uses would effectively eliminate habitat that could support special-status species if subsequent projects do not implement specific avoidance, minimization, and mitigation measures to compensate for adverse impacts.

(3) Impact BIO-3

Migratory Bird Treaty Act and California Fish and Game Code 3500 (et seq.) Protected Species. Implementation of the Specific Plan could result in the direct loss of nesting habitats or temporarily deter residential and migratory avian species and raptors that have the potential to breed and forage within the study area. *This impact can be fully mitigated through the adoption of certain mitigation measures presented below.*

Discussion

Field surveys indicated that the study area includes suitable nesting and foraging habitats for residential and migratory avian species that are protected under the Migratory Bird Treaty Act and California Fish and Game Code 3500 (*et seq.*). Northern harrier and western burrowing owl were observed within the study area during biological surveys as previously noted. In addition, other raptors and migratory songbirds may nest within existing vegetation within the study area, including Swainson's hawk and golden eagle among others. Impacts to these species from subsequent projects may include habitat loss and temporary displacement from development activities. Project activities may also temporarily deter foraging in the area; however, impacts would occur only during active development activities.

(4) Impact BIO-4

Creeks, Ditches, and Drainages. Implementation of the Specific Plan could result in development or ground disturbing activities without adequate preservation and enhancement of creeks in their natural state throughout the study area. *This impact can be fully mitigated through the adoption of certain mitigation measures presented below.*

Discussion

The study area contains several agricultural ditches and canals (see Figure IVB-4, Photographs 6 and 7), most of which are well maintained and devoid of riparian and wetland vegetation. However, one drainage ditch, which does not appear to be well maintained, currently supports riparian habitat consisting primarily of cottonwood trees (*Populus* sp.) (see Figure IVB-3 for location). These ditches and canals are potentially subject to CWA Section 404, 401, and California Fish and Game Code 1600 (et seq.) jurisdiction.

f. Significant Cumulative Impacts

Pursuant to Section 15130 of CEQA, cumulative impacts related to biological resources are generally analyzed in terms of the regional loss of habitat for plant and wildlife species. The project is located within an area occupied with both urban and agricultural uses, which includes a substantial anthropogenic disturbance regime (e.g., commercial agricultural operations, irrigation canal maintenance, electrical utilities, railroad, residential homes, and so forth). Land uses adjacent to the study area are predominately urban to the north and east; a municipal airport to the west, and predominately agricultural to the south, an area located outside the growth area of the Merced Vision 2015 General Plan.

Potential impacts include direct take and mortality to plant and wildlife species, adverse modification of local hydrologic regimes, degradation of water quality, isolation and fragmentation of existing habitats, increased predation on native wildlife by pets and feral animals, introduction and dispersal of nonnative species, and adverse modification of existing natural habitats caused by human encroachment. In addition, development resulting from the implementation of the Specific Plan could result in adverse impacts to special-status species. *Cumulative impacts can be fully mitigated through the adoption of the mitigation measures presented hereafter*.

The incremental contribution of the implementation of the Specific Plan to the cumulative loss of habitat for special-status plant and wildlife species, as well as possible jurisdictional waters, is addressed and fully mitigated by a comprehensive set of mitigation measures and design standards.

Common species in the study area are not afforded the same level of protection, as are special-status species, making it more difficult to assess the scope and extent of cumulative impacts. However, common species within the study area occur in large numbers throughout the region. As a result, it is not anticipated that activities confined to the study area will result in a trend toward state or federal listing, additional protection, or loss of viability for any common species. Consequently, impacts are likely to be considered minor. Additional surveys, appropriate

resource agency consultation (USFWS, USACE, CDFG, RWQCB, and so forth), and specific mitigation programs to avoid, minimize, and compensate for impacts and effects to special-status species and aquatic resources will be conducted prior to the authorization of subsequent development proposals. Therefore, the implementation of the proposed project will not contribute to a significant impact to biological resources, provided mitigation measures are followed to limit effects to regionally occurring special-status species, sensitive habitats, and aquatic resources.

3. MITIGATION MEASURES ADOPTED TO MINIMIZE SIGNIFICANT EFFECTS

The following information is provided in accordance with Section 15126.4 of the CEQA Guidelines. It is required that the Applicant comply with the "Adopted Policies and Regulations Which Avoid Biological Resources Impacts" and the substantive provisions of the applicable and relevant regulatory requirements under which biological resources are managed at the federal, state, and local level, as identified within this document. In addition, incorporation of the following measures will assure no significant adverse effect on biological resources identified in any local, state, federal, or regional plans, policies, or regulations.

a. Measures that Mitigate Project Impacts

When site-specific development proposals are submitted to the City for review and action, including but not limited to annexations and rezones, detailed site-specific biotic assessments and wetland delineations (where necessary) by qualified biologists shall be required to: (a) determine impacts to biological resources; and (b) recommend site-appropriate mitigation measures to avoid, minimize, and compensate for any identified potentially significant impacts. Depending upon the particular biotic resource and level of impact, the following measures, but not limited to, may be determined to be appropriate and applicable to subsequent development projects:

(1) Mitigation BIO-1

Sensitive Biological Lands. Focused surveys, including floristic surveys, targeted wildlife surveys, and CWA 401, 404, and California Fish and Game Code 1600 (*et seq.*) jurisdictional delineations where appropriate shall be required prior to initiating any development or other site-disturbance activity to avoid and minimize adverse impacts to sensitive biological lands (e.g., vernal pools, riparian areas, and wildlife corridors) to the maximum extent practicable pursuant to Merced Vision 2015 General Plan Policy OS-1.1.

- If present and practicable, impacts to sensitive biological lands will be avoided with the use of a minimum setback to maintain the biological and hydrological (when applicable) integrity of sensitive biological lands.

- If avoidance is not practicable, subsequent projects will be obligated to minimize and compensate for adverse impacts through consultation with the appropriate responsible local, state, and federal agencies (e.g., City Planning Department, RWQCB, CDFG,

USFWS, and USACE) to secure all obligatory discretionary permits and development authorization.

- At a minimum, development activities that result in loss of sensitive biological lands will be compensated for on a one-to-one (1:1) impact to mitigation ratio to ensure a no-net-loss standard within Merced County.

(2) Mitigation BIO-2

Special-Status Species. Subsequent projects will be required to include the following measures to assure no substantial adverse effect on local, state, or federally-protected plant or wildlife species result form the Project. Applicants will also be required to include focused surveys for the presence or absence of state and federal ESA-protected species and the habitats upon which they depend.

- If present and practicable, impacts to state and federal ESA protected species, and their habitats will be avoided by implementing environmental awareness programs for project staff, the designation of environmental inspectors/monitors who will have the authority to redirect non-emergency activities that might harm state and federally-protected species, limiting development activities to prescribed areas, and avoiding introduction of non-native species.

- If avoidance of ESA or other special-status species is not practicable, subsequent projects will be obligated to minimize and compensate for adverse impacts through consultation with the appropriate responsible state and federal agencies (e.g., CDFG, USFWS, or NMFS) to secure all obligatory discretionary permits and obtain all relevant development authorizations.

- Specific mitigation measures are suggested below for burrowing owl, vernal pool branchiopods, and special-status plants:

Burrowing Owl and Swainson's Hawk

1. Projects will conduct pre-development surveys to following CDFG guidelines. If no active avian nests are identified on or within 250 feet of the development site, no further mitigation would be required.

2. If active nests are located, development would be delayed within the buffer zone until the young have fledged or appropriate mitigation measures have been developed in consultation with appropriate resource agencies.

3. In the case of burrowing owls, burrows would be avoided or passive exclusion and relocation techniques would be implemented following CDFG guidance to the maximum extent practicable.

4. In the case of Swainson's hawks, informal consultations with CDFG will be initiated to determine appropriate actions necessary to protect the nest site until the young have fledged and begin foraging independently.

Vernal Pool Branchiopods

1. Field surveys for vernal pool branchiopods will be conducted following USFWS "Interim Survey Guidelines for Recovery Permits for Vernal Pool Branchiopods" to the maximum extent practicable in consultation with all applicable agencies (e.g., USFWS and CDFG).

2. If present and practicable, impacts to vernal pool species and habitats will be avoided with the use of a minimum setback.

3. If avoidance is not practicable, developer will be obligated to minimize and compensate for adverse impacts through consultation with the appropriate responsible local, state, and federal agencies (e.g., City Planning Department, CDFG, USFWS) to secure all obligatory discretionary permits and development authorization. Developers shall submit to the City Building Division notification of the determination from the USACE regarding fill of the site and CDFG / USFWS for take of listed species prior to issuance of grading permits.

4. Activities that result in loss of vernal pool habitats will at a minimum be compensated for on a 1:1 impact to mitigation ratio to ensure a no-net-loss standard within Merced County.

Special-Status Plant Species

1. Pre-development surveys will be performed to detect the presence of special-status plant species within the project areas.
2. If present and practicable, impacts to special-status plant species and habitats will be avoided with the use of a minimum setback.
3. If avoidance is not practicable, applicants will be obligated to minimize and compensate for adverse impacts through consultation with the appropriate responsible local, state, and federal agencies (e.g., City Planning Department, CDFG, and USFWS).
4. In areas subject to development, special-status perennial plants will be salvaged for transplantation following established protocols.
5. For special-status annual plants, seeds will be collected from populations prior to the loss of the populations due to development.
6. Salvage plants and collected seeds will be planted and dispersed within suitable habitat not currently occupied by the affected plant species, to avoid impacts on the genetic composition of existing populations.

(3) Mitigation BIO-3

Migratory Bird Treaty Act and California Fish and Game Code 3500 (et seq.) Protected Species. Projects will be required to include the following measures to assure no substantial adverse effect on any nesting habitats or foraging areas for residential and migratory species.

- A qualified biologist will conduct a nesting bird and raptor survey prior to any vegetation-clearing activities. Surveys will occur within 72 hours prior to initiation of physical ground disturbance activities to document that no occupied passerines and/or raptor nests would be impacted.

- Vegetation clearing activities will be completed prior to the onset of the avian breeding season beginning in March, to the maximum extent practicable, in order to greatly reduce or avoid adverse impacts to avian species. Clearing of vegetation prior to development activities would deter the majority of individuals from selecting nesting or breeding sites within the development areas.

- Upon detection of an active nest within the project site or on immediately adjacent lands, a buffer zone from occupied nests will be maintained during physical ground disturbing activities. Once nesting has been determined to cease, the buffer may be removed.

(4) Mitigation BIO-4

Biologically Sensitive Ditches, and Drainages. Projects will be required to avoid, minimize, and/or compensate for adverse impacts to biological resources that exist in the areas ditches and drainages.

- Subsequent projects will be obligated to retain substantial woodlands or stands of trees and open space amenities when practicable, or minimize and compensate for adverse impacts through consultation with the appropriate responsible local, state, and federal agencies (e.g., City Planning Department, RWQCB, CDFG, and USACE) to secure all obligatory discretionary permits and development authorization.

b. Measures that Mitigate Cumulative Impacts

Implementation of the aforementioned mitigation measures and standards will reduce potential cumulative impacts to biological resources. Therefore, potential cumulative impacts from the implementation of the Specific Plan are expected to be fully mitigated.

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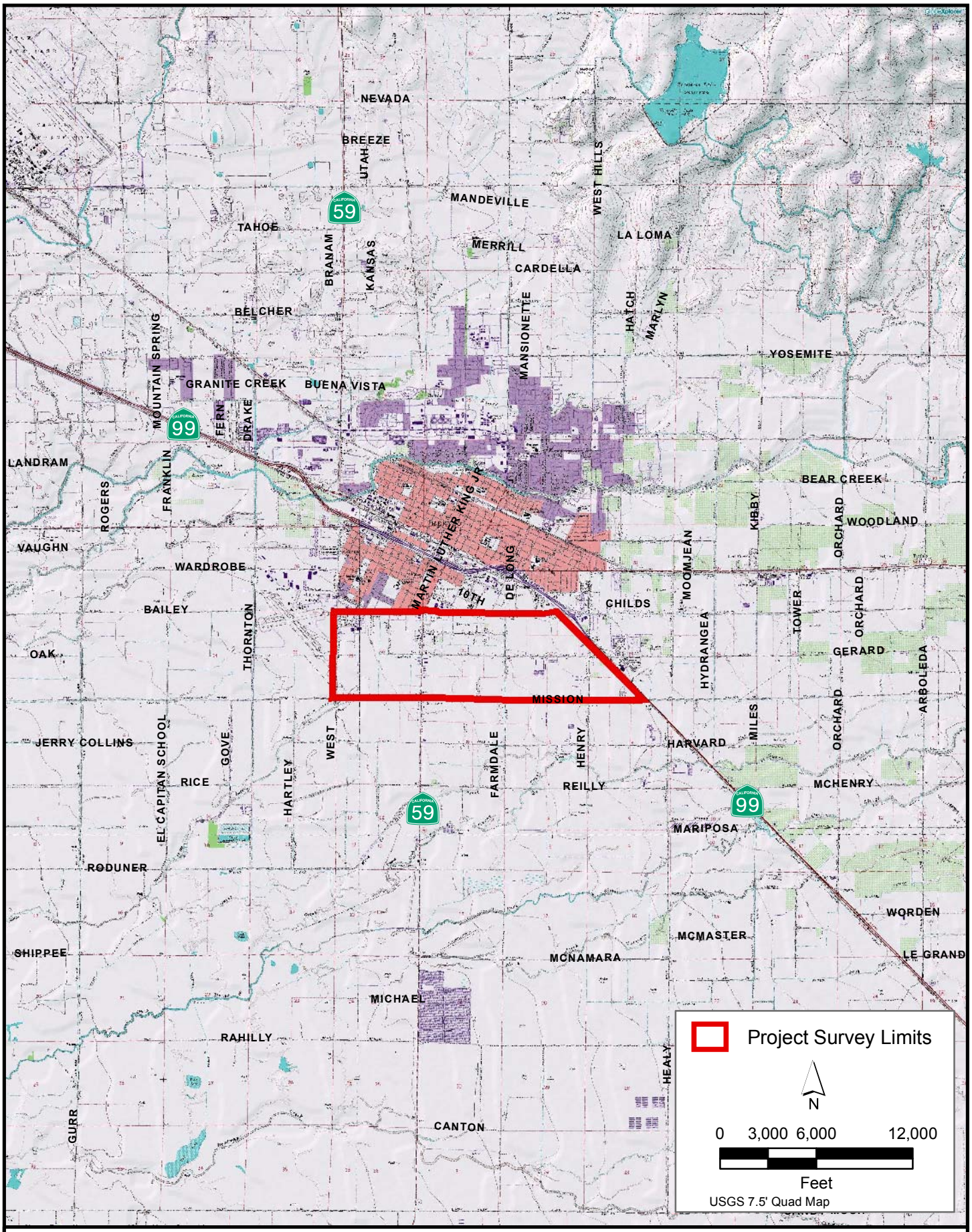
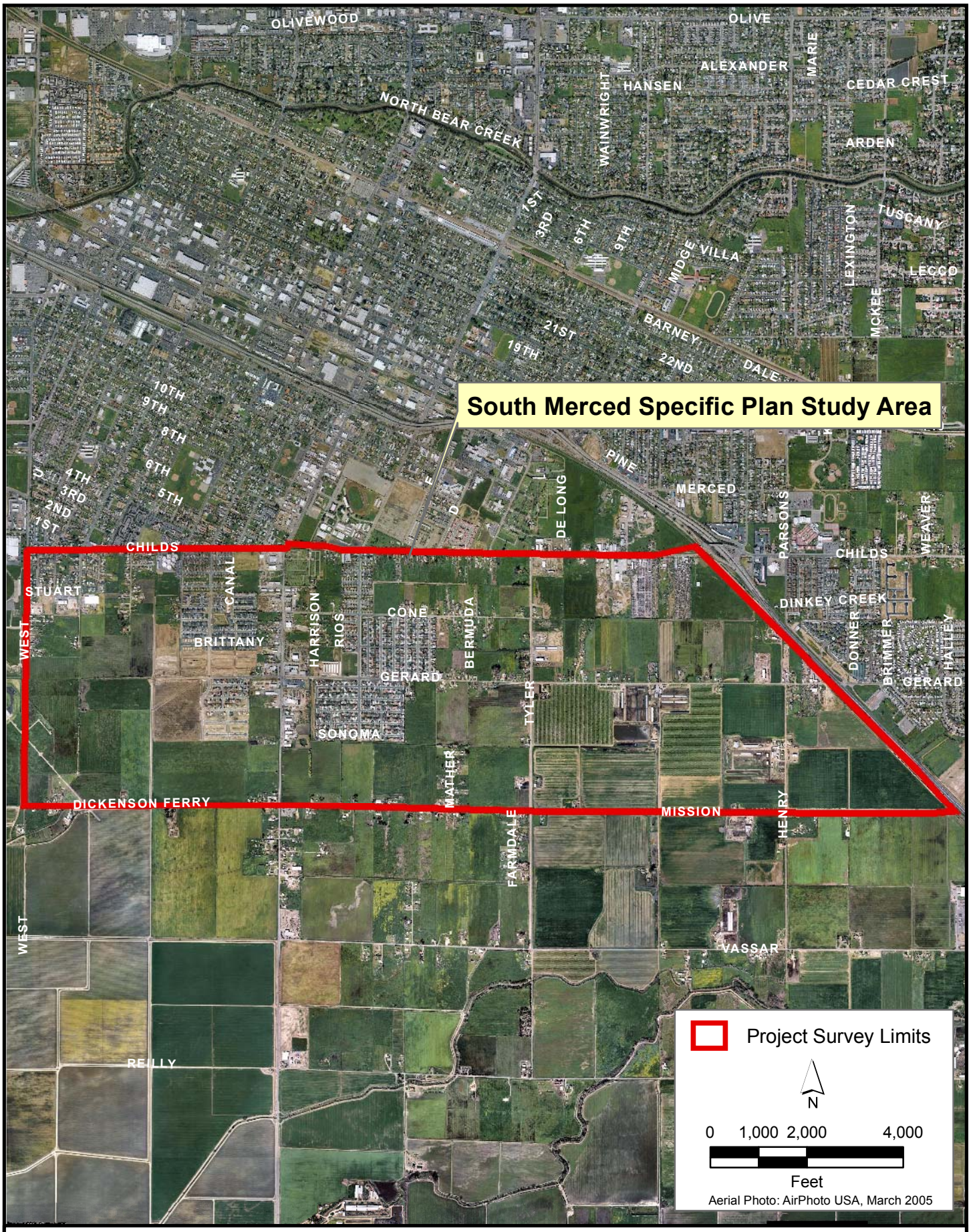


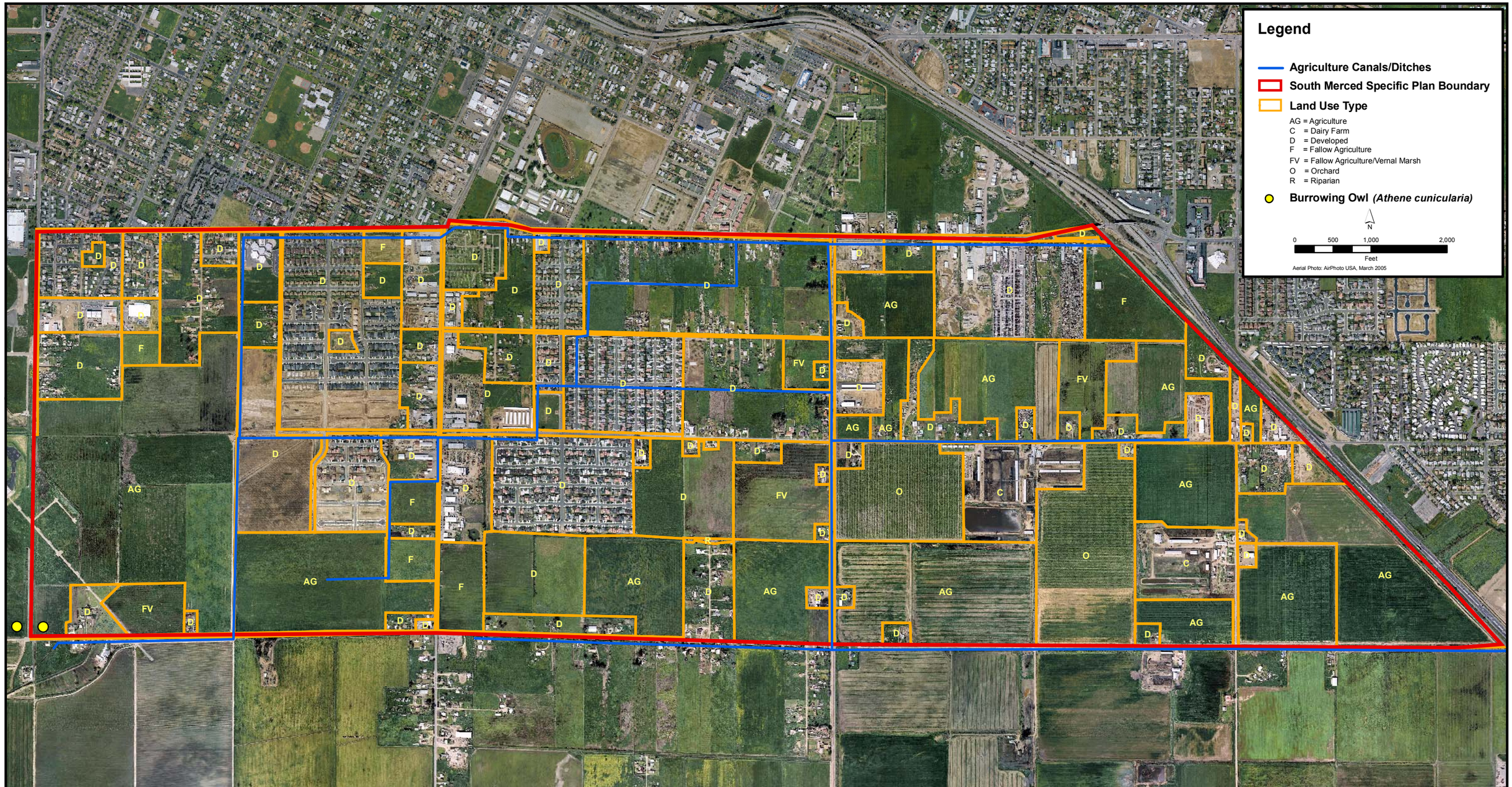
South Merced Specific Plan Vicinity Map

PROJECT NO.: 17325731.3000	PROJECT:	South Merced Specific Plan Biological Technical Report	FIGURE IVB-1



South Merced Specific Plan Study Area

PROJECT NO.: 17325731.3000	PROJECT:	South Merced Specific Plan Biological Technical Report	FIGURE IVB-2



South Merced Specific Plan

PROJECT NO.: 17325731.30000	PROJECT: Vegetation Communities and Drainage Map	FIGURE IVB-3	URS

		Photograph: 1 **Photo Date:** November 29, 2006 **Comment:** Photo depicts developing marsh area left fallow for an undeterminable number of years.
		Photograph: 2 **Photo Date:** November 29, 2006 **Comment:** Photo depicts active agricultural land that occurs throughout, and is typical of the study area.
		Photograph: 3 **Photo Date:** November 29, 2006 **Comment:** Photo depicts older residential areas that occur in the study area.

Photograph: 4

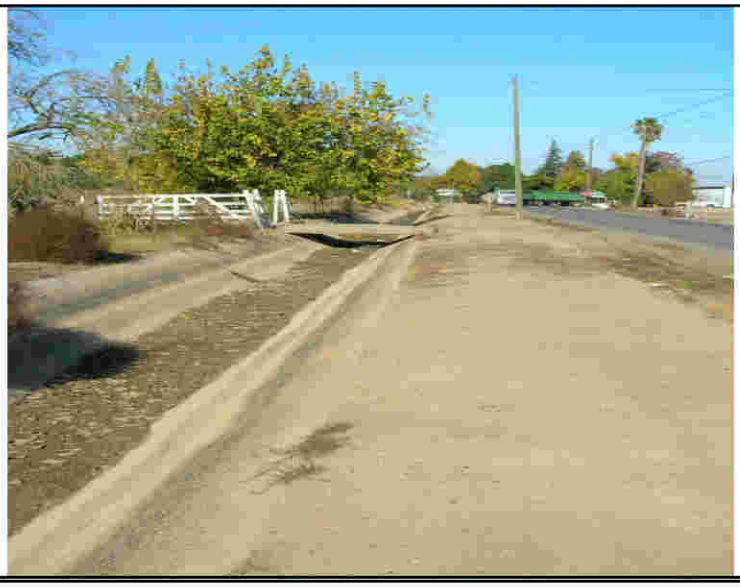
Photo Date: November 29, 2006

Comment: Photo depicts the gated entry to an industrial site. Numerous industrial properties occur throughout the study area.

Photograph: 5

Photo Date: November 29, 2006

Comment: Photo depicts newly constructed tract homes in the background and the building pad for homes to be constructed in the foreground that occurs within the study area.



Photograph: 6

Photo Date: November 29, 2006

Comment: Photo depicts a typical concrete-lined channel that is used as both a storm drain and agricultural channel that occurs throughout the study area.

Photograph: 7

Photo Date: November 29, 2006

Comment: Photo depicts the area of the burrowing owl sighting which occurred, adjacent to the south west corner, but outside of the study area boundaries.

Photograph: 8

Photo Date: November 29, 2006

Comment: Photo depicts a train track that runs along the eastern edge of the study area.

Photograph: 9

Photo Date: November 29, 2006

Comment: Photo depicts cattle farming within the study area.

C. CULTURAL RESOURCES

This section describes how the South Merced Specific Plan will affect cultural resources. Where significant effects are identified, mitigation measures are provided to reduce those impacts to the extent feasible. Cultural resources include archaeological and historical objects, sites and districts, historic buildings and structures, cultural landscapes, and sites and resources of concern to local Native Americans and other ethnic groups. Paleontological resources include paleontological site and fossil remains of prehistoric life.

1. ENVIRONMENTAL SETTING

The following information is provided in accordance with Section 15125 of the CEQA Guidelines. This environmental setting is the baseline for determining whether the Specific Plan will have a significant environmental impact on cultural resources.

a. Study Area for Direct Impacts

The study area for direct impacts is east of the San Joaquin River, between the Merced River (to the north) and Owens Creek (to the south). These creeks follow their natural alignment, for the most part, but many streams and creeks in this region are highly channelized and dammed, and flow is intermittent. Significant portions of the lowlands in the San Joaquin Valley were marshlands during prehistoric times.

Before the 1800s, prior to European immigration to the Valley, a range of large mammals including elk, antelope, and grizzly bear frequented the marshy habitats in this part of the San Joaquin Valley. During the influx of Europeans in the mid-1800s and the consequential settlements and expansions, however, many of the native species were extirpated or radically reduced. A variety of terrestrial and aquatic birds are still present in the valley but are also in reduced numbers. One of the main causes for the deterioration of the environment was implementation of water diversion and control programs for agriculture and industry throughout the valley beginning in the late 1800s and continuing to the present.

Currently, the dominant land uses in the study area are agricultural production and residential and commercial development. Vegetation in the project area is predominantly non-native grassland, with areas of ruderal vegetation. This landscape is the result of historic land-use changes that have included alterations of drainage patterns, vegetation clearance for farmlands, and the construction of roads and infrastructure.

b. Surrounding Area

The surrounding area is the San Joaquin Valley of Central California. The environmental setting, prehistory, ethnography, and history of this region are generally homogeneous throughout the valley and can be summarized for the study area specifically. The following synopsis provides for an understanding of the development of human occupation in the San Joaquin Valley.

(1) Geologic Setting

The primary geologic deposits in the lower elevations of the Central Valley are Quaternary alluvium consisting of decomposed granite derived primarily from river flooding and meandering streams associated with the San Joaquin/Sacramento River systems. Flooding episodes, which were common historically, are now relatively uncommon in the valley because of water control projects.

Surficial sedimentary units of predominantly Cenozoic age underlie most of the project area. These sediments include the andesitic mudflow and intervolcanic channel sands of gravels of the Mehrten Formation (Tm), the alluvial fan-derived sediments from the North Merced Gravels (QTnm), the Riverbank Formation (Qrb), and the underlying Laguna Formation (Ql). Lithologies include locally derived, coarse pebble to cobble-size gravels, with interbedded sands, silts, and clays; all of these are potentially favorable to the preservation of paleontological resources. Geologic map data of Matthews and Burnett (1965), Marchand and Allwaldt (1981), and Clinkenbeard (1999) have been used for reference and analysis.

Available structural and stratigraphic evidence suggests that significant westward tilting of the central Sierra Nevada may have occurred during Pliocene times. The Laguna Formation includes at least two major episodes of alluviation, separated by an extensive period of soil formation, and may record the earliest glaciation of the Sierra Nevada. The net result of these periods of late Tertiary Sierran tilting was a shift in drainage direction from southwesterly to westerly. The Late Tertiary uplift in the southern Sierra Nevada may have considerably exceeded that in the north. To the northeast of the project site, remnants of andesite mudflows form resistant ridges that stand high above the present land surface. These flow remnants define the ancestral course of fluvial systems formed during the deposition of the Mehrten Formation, 10 to 4 million years ago (Curtis, 1954).

During latest Pliocene or earliest Pleistocene time, the Sierra Foothill pediment was beveled across Tertiary and older rocks along the entire western margin of the Sierra Nevada. Beginning in early Turlock Lake time, at least seven periods of glacial outwash deposits may have been superimposed on a progressively subsiding San Joaquin Valley. Extensive periods of stability and soil formation occurred, followed by subsequent incision and dissection.

Basin subsidence may have continued through Quaternary time. This may provide an explanation for the converging geomorphic surfaces and westward shifts in fan position. Some of the mapped lineaments in the southeastern San Joaquin Valley, especially the northwest-trending sets, may be tensional features associated with a hinge line along the boundary between the Sierra Nevada and the actively subsiding Sacramento and San Joaquin Valleys (Schleman, 1967, 1971, and 1972; Marchand and Allwardt, 1981).

(2) Paleoenvironmental Setting

The Valley has a biologic record spanning more than 120 million years, starting in the late Cretaceous period. Sediments and fossils of marine and terrestrial organisms have accumulated to produce a significant but incomplete record of past life and geography. This complex record

has been intermittently investigated, beginning in the 1860s, by Anderson (1958), Condit (1939), Gabb (1864), Marchand and Allwaldt (1981), Merrill and Palmer (1984), and Wagner (1975).

The Mehrten Formation, the North Merced Gravels, and the Riverbank Formation constitute much of the paleontological formations in the project area and environs; these are all late Tertiary and Quaternary age sedimentary rock formations. These formations range in facies type from indurated volcanic mudflow to conglomerate, unconsolidated siltstone, and clay, all of which are potentially fossiliferous. However, abundance and diversity of fossils can vary widely from place to place, with paleontological resource sensitivity varying similarly, according to geologic rock unit. This report emphasizes fossils of vertebrates, invertebrates, and plants because of their relative rarity in respect to these geological periods in the Sierra Nevada region and the potential scientific importance of the individual specimens within the project area.

(3) Ethnography

At the time of contact with Europeans, the Northern Valley Yokuts occupied the San Joaquin Valley from the confluence of the San Joaquin River and Bear Creek to a point just north of the mouth of the lower Calaveras River (their southern limit). The Northern Valley Yokuts were a branch of the Valley Yokuts, whose members lived throughout the San Joaquin Valley and peripheral foothills (Wallace, 1978; Kroeber, 1925).

The Northern Yokuts were divided into patrilineal groups that could be defined as tribes (Kroeber, 1925; Latta, 1949). Various dialects could be distinguished among the groups, and each separate village served as headquarters for a local patrilineage. The primary occupation sites were typically located on perennial streams, though many outlying camps were used during the seasonal round to take advantage of isolated or seasonal resources.

Acorns, generally obtained from a variety of locally available oaks, provided one of the primary subsistence resources for the Northern Valley Yokuts. Acorns normally were crushed using mortars and pestles. Bedrock mortars were common. Oaks are not currently present in the immediate project area, but grass seeds would have been an important plant food resource. The Yokuts also exploited numerous other seeds, nuts, fruits, and roots for subsistence. A wide variety of small game and fish also were obtained through a range of hunting techniques.

The Northern Valley Yokuts constructed boats, fashioned crude pottery, and made coiled baskets that were traded with neighboring groups. Their trade network extended to the Costanoans (Ohlone) in the Monterey Bay region and the Salinans in the North Coast ranges. The Sierra Miwok, to the east, were their primary trading partners. Exchange between the Northern Valley Yokuts and the Miwok was extensive, both in material goods and in political and social patterns (Wallace, 1978: 465).

Not much is known of the religious practices of the Northern Valley Yokuts, and most of the information that is available has been gleaned from neighboring tribes (Wallace, 1978: 467). Informants from the Sierra Miwok claimed that the Northern Valley Yokuts living on the Stanislaus River used datura, a potent psychotropic plant alkaloid, in ceremonials (Kroeber, 1925: 502) to induce a trance-like state.

Very few Northern Valley Yokuts survived the contact period. Population decline and the erosion of Northern Valley Yokuts culture began during the Spanish-Mexican period (1769–1846) and rapidly declined with the onset of American settlement and the Gold Rush. The missions undertook intensive proselytizing in the Northern San Joaquin Valley in the early 1800s as native coastal populations declined. Many Northern Yokuts were taken more or less forcibly to the missions at San Jose, Santa Clara, Soledad, San Juan Bautista, and San Antonio. In the summer of 1833, a malaria epidemic decimated the local population. The arrival of American miners and settlers in the late 1840s completed the dispossession and disenfranchisement of native groups in the Northern San Joaquin Valley. Representatives of three Northern Valley Yokuts tribes signed land cessation treaties at that time in exchange for large reservations. These treaties were never ratified by the United States Senate, and the reservations never materialized. Most of the few Native American survivors of the protohistoric period were forced to adapt to European lifeways. Many found low-paying work on ranches in the area (Wallace, 1978: 470).

(4) Archaeological Background

The archaeological overview in this section was synthesized from discussions of Central Valley prehistory in Moratto (1984), Chartkoff and Chartkoff (1984), and Wallace (1978: 462–470).

There is well-substantiated evidence of Native American occupation in the San Joaquin Valley by 12,000–8000 before present (B.P.), though there are relatively few known sites. During this Pleistocene epoch, large lakes in the Central San Joaquin Valley were a major focus of human occupation. The paleo-shoreline sites of Tulare Lake have provided nearly all of the diagnostic materials for the period, including fluted projectile points (described as Clovis-like), scrapers, and chipped crescents (Moratto, 1984: 81), an assemblage loosely characterized as a “Far Western Fluted Point Tradition” (WFPT). Characteristic sites appear along paleo-shorelines, in piedmont zones of former grasslands, and in mountain passes associated with fossil lakes. The Witt site, on the paleo shoreline of Tulare Lake, yielded numerous specimens of extinct Early Holocene fauna in the same contexts as cultural materials of these types. In the Central Valley, Buena Vista Lake sites (Fredrickson and Grossman, 1977; Hartzell, 1992), the Skyrocket sites (CAL-629, CAL-630) in the foothills of Calaveras County (Pryor n.d.; in Caltrans 1999: 7–8), and the Clark’s Flat site (STA-S342) in the Stanislaus County foothills (Peak and Crew, 1990) also have yielded early stemmed-type projectile points.

The stone tool assemblage after about 7,000 B.P. generally is quite similar to the WFPT/ stemmed point tradition noted at earlier sites, but at this time there is an increase in the use of groundstone tools. Well-worn metates and manos suggest an increased dietary reliance on acorns, seeds, and other processed plant resources. As noted, many of the standard tools from the WFPT/stemmed point tradition continue to be used throughout the so-called Middle Period.

During the Late Period, from roughly 2,500 years B.P. to the time of significant European contact, the material culture patterns observed at the time of European contact emerged and developed. The ethnohistoric record provides a valuable resource for understanding Late Period archaeology. The archaeological record at this time reveals a suite of material culture that differs significantly from that noted in Middle Period stone tool assemblages. Heavily used mortars and pestles (evidence of an emphasis on acorn and seed processing) and bow-and-arrow technology

emerge at this time. Large occupation sites, representing semi permanent and permanent villages, also appear during this time. Typical of these village sites are dark-colored midden deposits and associated house pits and remains of communal structures. Typical artifacts include ornaments of shell, steatite vessels, and bone implements, obsidian from eastern California sources, and notched cobbles possibly associated with fishing activities.

Archaeological investigations conducted at Pacheco Pass area (west of the project area) and Buchanan Reservoir (to the east) have provided information for more detailed local chronologies. Detailed archaeological information on Pacheco Pass and Buchanan Reservoir sites is discussed to varying extents by Olsen and Payen (1968, 1969), Pritchard (1970), Bennyhoff (1994), Moratto (1969, 1984), and Caltrans (1999).

(5) Historic Background

A few Spanish explorations, incursions by American traders from east of the Sierra, and Mission recruitment forays constitute the earliest contacts between Europeans and natives of the Central Valley. These early forays had devastating effects on the native population, not only as the result of hostilities over mission recruitment but, more insidiously, through the introduction of non-native diseases. A massive epidemic of malaria or possibly measles swept the valley in 1833, exterminating whole village and tribe populations. By the advent of the 1849 Gold Rush, the native presence in the valley had been severely diminished. During the early 1850s, the first Euro-American settlers established farms and ranches along the rivers and creeks in the area now known as Merced County. Merced County was formed from a part of Mariposa County in 1855, and the county seat was established in the Bear Creek area. Rich soils in the central and eastern parts of the area supported prosperous cattle ranches. Local agricultural trade centers emerged. Farms situated along the numerous roads leading to Sierra Nevada mines prospered from the mining trade. Stock, as well as wheat and other “dry-farmed” grains, were the primary products. Many of these goods were shipped to Stockton via the San Joaquin River.

Although early agriculture in Merced County focused on “dry-farming” methods, during the 1860s many local ranchers and farmers began to develop small-scale irrigation projects. The Robla Canal Company and the Farmer’s Canal Company (which eventually absorbed the Robla Canal Co.) expanded the extent of irrigation in the area. These irrigation networks relied heavily on existing natural waterways that were modified (i.e., channeled) for irrigation. In the early 1870s, “dry-farmed” wheat continued as the dominant agricultural crop. However, as the newly arrived railroad provided a more efficient means of transport to various marketplaces (Hoover et al., 1990), farming began to diversify. In 1872, with the establishment of a new railroad stop, Merced became the county seat. Many businesses moved there from the former county seat at Bear Creek. The City of Merced was incorporated in 1889 (Greater Merced Chamber of Commerce, 2000). By the early 1880s, Charles H. Huffman, a prominent businessman and landowner instrumental in the formation of the railroad town of Merced, controlled the irrigation system through the Merced Canal and Irrigation Company. This company expanded existing irrigation systems and formed agricultural settlements known as “colonies.” These “colonies” served as ready-made irrigated farmsteads, enticed new settlement, and increased real estate values throughout the area. In fact, the water development often was undertaken specifically to increase land values and encourage settlement. Water developers typically bought up the lands to

be served, in advance of their water development, to profit from the land boom that would follow.

In 1888, the Merced Canal and Irrigation Company was reorganized and refinanced to form the Crocker-Huffman Land and Water Company. With the financial backing of wealthy landowner Charles Crocker, this new entity organized the First National Bank, which financed numerous development projects in the county, including a large creamery, the dam and canal that created Lake Yosemite, and the Fairfield and Le Grand canals leading out of the lake. By the 1890s, the Crocker-Huffman Company had organized 16 colonies comprising approximately 30,000 acres, with roughly 6,000 acres cultivated. A wide variety of crops was grown in the colonies, including fruits, nuts, and alfalfa, an important feed crop for dairy cattle in Merced and surrounding areas.

In 1919, Merced County voters approved the creation of the Merced Irrigation District (MID), a publicly owned entity that purchased the Crocker-Huffman system in 1922. Voters soon passed a bond issue funding improvements and expansion of the existing irrigation system, an effort that has continued into the present day (Radcliffe, 1940; Cabezut-Ortiz 1987; JRP, 1998). Naturally, the extensive irrigation system served as a catalyst for the expansion of agriculture in general, specifically fostering the production of a variety of crops. In support, the railroad further increased the efficiency of transporting agricultural products from Merced to other California locales.

By the beginning of the 20th century, irrigated agriculture had far surpassed “dry-farming” as the most profitable method of agriculture and allowed smaller farms to produce a variety of high-yielding cash crops. In the early 1900s, the dairy industry became a substantial contributor to the county’s economy. Portuguese immigrants emerged as leaders in this industry. Italian immigrants excelled in the production of tomatoes, and by the 1950s, processing of such agricultural products (i.e., packing, freezing, etc.) had become a large part of the Merced economy.

The irrigation systems in the county continued to be improved, especially after World War II, when the wholesale replacement of wooden irrigation features with concrete began. The extensive irrigation system served crops such as cotton, figs, sweet potatoes, tomatoes, and onions—all of which emerged as leading crops and continue to be produced in Merced County today (Cabezut-Ortiz, 1987).

c. Study Area for Cumulative Impacts

The environmental setting for the study area for cumulative impacts is the same environmental setting as the study area for direct impacts and the surrounding area.

d. Methods

To identify known potentially significant cultural resources in the Specific Plan planning area and provide guidance for future projects that may occur in the Specific Plan planning area, URS established a cultural resource study area that extended one-half mile beyond the Specific Plan planning area. To obtain baseline cultural resource information and data, URS conducted a

records search, including a review of previous cultural resource surveys within the one-half mile study area. In addition, the City of Merced contacted the California Native American Heritage Commission (NAHC) to obtain information regarding the location of any potential sacred sites that may be impacted by the project.

e. Existing Physical Conditions in the Study Area

(1) Cultural Resources Records

To obtain baseline cultural resource data for the Specific Plan, URS conducted a records search on November 21, 2006, at the Central California Information Center (CCIC), a cultural resources databank subset of the California Historical Resources Information System (CHRIS) at the California State University, Stanislaus, in Turlock. Resources examined at the CCIC included previously recorded archaeological sites and historic structures and features, as well as previous cultural resources studies. In addition to reviewing this material, URS also reviewed electronic databases for the National Register of Historic Places (NRHP), the California Historic Landmarks (CHLs), and California Points of Historic Interest (CPHIs).

(2) Cultural Resources Surveys

The records search identified 23 cultural resources surveys within the one-half mile study area. Ten of these surveys covered less than 25% of the Specific Plan project area (Table IVC-1).

TABLE IVC-1

Previous Cultural Resource Surveys within the One-Half-Mile Study Area

Citation	Survey Year	Survey Number	USGS Quadrangle (7.5-Minute)	Survey Within SP (Yes/No)?
Pope, Joe L. Cone-Harrison Project, Clean Water Grant No. C-06-2964-110. On file at CCIC.	**1987**	**ME-680**	**Merced**	**Yes**
Peak, Ann S. Cultural Resource Assessment of the City of Merced Project for Land Disposal of Wastewater, Merced County, California. On file at CCIC.	**1975**	**ME-1799**	**Merced**	**Yes**
City of Merced Redevelopment Agency. City of Merced Historic Building Survey Final Report. On file at CCIC.	**1985**	**ME-2228**	**Merced**	**Yes**
Varner, Dudley M. A Cultural Resource Study of the City of Merced Municipal Airport Pipeline Project, Merced County, California. On file at CCIC.	2006	ME-6201	Atwater	No
Byars, Mark A., and Roger Werner. An Archaeological Study of the Foster Farms Processing Plant and Waste-water Pond Project, near Merced, Merced County California. On file at CCIC.	1992	ME-1522	Atwater	No
Hatoff, Brian, et al. Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project. On file at CCIC.	**1995**	**ME-2759**	**Merced**	**Yes**

TABLE IVC-1 (Continued)

Previous Cultural Resource Surveys within the One-Half-Mile Study Area

Citation	Survey Year	Survey Number	USGS Quadrangle (7.5-Minute)	Survey Within SP (Yes/No)?
Laylander, Don, and Billy A. Silva. Negative Archaeological Survey Report for the State Route 99 and Mission Road Interchange, District 10 in Merced County, CA. On file at CCIC.	**1999**	**ME-3614**	**Merced**	**Yes**
Wilson, Kelda. Historical Study Report for the Proposed Campus/Healy Interchange on California State Highway 99 in Merced, Merced County, California. On file at CCIC.	**1999**	**ME-3786**	**Merced**	**Yes**
Laylander, Don, et al. Negative Archaeological Survey Report for the State Route 99 and Mission Road Interchange, District 10 in Merced County, CA. On file at CCIC.	**1999**	**ME-3834**	**Merced**	**Yes**
Caltrans. Historic Property Survey Report of the Mission Interchange Project. On file at CCIC.	**1999**	**ME-4773**	**Merced**	**Yes**
Eastman, Bright, et al. Historic Architectural Survey Report and Historic Resource Evaluation Report for MER-99 Mission/Healy Interchange. Merced, Merced County, California, On file at CCIC.	**1999**	**ME-4775**	**Merced**	**Yes**
Welch, Laurie. Supplemental Historic Resource Evaluation Report for MER-99 Mission/Healy Interchange. Merced, Merced County, California, On file at CCIC.	**2000**	**ME-4776**	**Merced**	**Yes**
Napton, Kyle L. Cultural Resource Investigations of the Alfarata Ranch, Merced County, California. On file at CCIC.	1989	ME-644	Merced	No
Napton, Kyle L. Cultural Resources Investigations of the Proposed 359-Acre Weaver Area Annexation/Master Planned Community Project, Merced County, California. On file at CCIC.	1994	ME-2418	Merced	No
Jensen & Associates. Archaeological Inventory Survey of Tracy to Fresno Longhaul Fiberoptics Data Transmission Line, Portions of Fresno, Madera, Merced, Stanislaus, and San Joaquin Counties, California. On file at CCIC.	1996	ME-2930	Merced	No
Pierce, Wendy N. An Archaeological Survey Report for a Proposed Rehabilitation of State Route 140 Between Highway 99 and the Mariposa County Line, Merced County, California. On file at CCIC.	1999	ME-3628	Merced	No
Burton, Jeffery F., et al. Confinement and Ethnicity, An Overview of World War II Japanese American Relocation Sites. On file at CCIC.	1999	ME-3845	Merced	No
Pastron, A.G. Historical and Cultural Resource Assessment. Existing Telecommunications Facility, Site No. CV-504-03, 1392 Healy Rd., Merced Co., California. On file at CCIC.	2000	ME-4042	Merced	No
URS. Archaeological Survey Report for Merced Campus Parkway. On file at CCIC.	2001	ME-4384	Merced	No

TABLE IVC-1 (Continued)

Previous Cultural Resource Surveys within the One-Half-Mile Study Area

Citation	Survey Year	Survey Number	USGS Quadrangle (7.5-Minute)	Survey Within SP (Yes/No)?
Laylander, Don. Negative Archaeological Survey Report for the State Route 99 and Mission Road Interchange, District 10 in Merced County, CA. On file at CCIC.	1999	ME-4774	Merced	No
Dice, Michael. Records Search and Phase I Archaeological Survey Results for the Proposed Cingular Communications Facility CV-642-01 (South Merced), Mission Avenue and SR 59, Merced, Merced County, California. On file at CCIC.	2002	ME-5406	Merced	No
Brady, J., and D. Lanner. Historic Property Survey Report for the Proposed Rehabilitation of Henry Street between Mission Avenue and Vassar Avenue, Merced County, California. On file at CCIC.	2003	ME-5600	Merced	No
Cardiff, Darrell, et al. Archaeological Survey Report for the Proposed Campus/Healy Interchange on California State Highway 99 from Owens Creek Bridge to Childs Avenue in Merced, Merced County. On file at CCIC.	1999	ME-4772	Merced	No

(3) Archaeological Sites

During the cultural resources record search, URS identified five previously recorded archaeological resources within the study area (see Table IVC-2). None of these sites is located within the Specific Plan project area.

TABLE IVC-2

Archaeological Sites Previously Documented within the One-Half-Mile Study Area

Site No.	Site Name	Site Type	Eligibility for NRHP or CRHR	USGS Quadrangle (7.5-Minute)	Year Recorded	Site Within SP (Yes/No)?
P-24-000097	**Southern Pacific San Joaquin Valley Mainline Railroad**	**Historic Railroad**	**Not evaluated for NRHP or CRHR**	**Merced**	**1996**	**Yes**
P-24-000593	CA-MER-350H	Historic foundations	Not eligible for NRHP; not evaluated for CRHR	Merced	1999	No
P-24-000594	CA-MER-351H	Historic foundations	Not evaluated for NRHP or CRHR	Merced	1999	No
P-24-000597	CA-MER-354H	Historic foundations	Not eligible for NRHP; not evaluated for CRHR	Merced	1999	No

TABLE IVC-2 (Continued)

Archaeological Sites Previously Documented within the One-Half-Mile Study Area

Site No.	Site Name	Site Type	Eligibility for NRHP or CRHR	USGS Quadrangle (7.5-Minute)	Year Recorded	Site Within SP (Yes/No)?
P-24-000642	California Historical Landmark No. 934	Temporary Detention Camp	CHL No.934	Merced	1980	No

CRHR = California Register of Historic Resources

(4) Historic Resources

During the cultural resources record search, URS identified 24 historic properties in the study area (Table IVC-3). Three of these historic resources are located within the Specific Plan project area.

TABLE IVC-3

Historic Resources Previously Documented within the One-Half-Mile Study Area

Site No.	Site Name	Site Type	Eligibility for NRHP or CRHR	USGS Quadrangle (7.5 Minute)	Recorded	Site Within SP (Yes/No)?
P-24-000086	**Hartley Lateral**	**Historic canal**	**Not eligible for NRHP; not evaluated for CRHR**	**Merced**	**1993**	**Yes**
P-24-000096	Farmdale Lateral	Historic canal	Not eligible for NRHP; not evaluated for CRHR	Merced	1994	No
P-24-000596	CA-MER-353H	Dairy farm	Not eligible for NRHP; not evaluated for CRHR	Merced	1999	No
P-24-000600	CA-MER-357H	Single family property	Not eligible for NRHP; not evaluated for CRHR	Merced	1999	No
P-24-000601	CA-MER-358H	Single family property	Not eligible for NRHP; not evaluated for CRHR	Merced	1999	No
P-24-000650	Bridge #39-59L	Historic bridge	Not evaluated for NRHP or CRHR	Merced	1979	No
P-24-000736	Merced Cemetery	Cemetery	Needs to be re-evaluated	Merced	1985	No
P-24-000737	Evergreen Memorial Park	Historic park	Eligible for CRHR	Merced	1985	No

TABLE IVC-3 (Continued)

Historic Resources Previously Documented within the One-Half-Mile Study Area

Site No.	Site Name	Site Type	Eligibility for NRHP or CRHR	USGS Quadrangle (7.5 Minute)	Recorded	Site Within SP (Yes/No)?
P-24-000747	**Calvary Cemetery**	**Cemetery**	**Needs to be re-evaluated**	**Merced**	**1985**	**Yes**
P-24-000795	Merced County Fire Department	Historic structure	Appears eligible for NRHP	Merced	1985	No
P-24-000796	Alan Stout Home	Single family property	Eligible for CRHR	Merced	1985	No
P-24-000819	501 M Street	Single family property	Eligible for CRHR	Merced	1985	No
P-24-000872	736 R Street	Single family property	Not eligible for NRHP; not evaluated for CRHR	Merced	1985	No
P-24-000876	536 W. 10th Street	Single family property	Needs to be re-evaluated	Merced	1985	No
P-24-000877	629 W. 10th Street	Single family property	Not evaluated for NRHP or CRHR	Merced	1985	No
P-24-000878	735 W. 10th Street	Single family property	Eligible for CRHR	Merced	1985	No
P-24-000879	755 W. 10th Street	Single family property	Eligible for CRHR	Merced	1985	No
P-24-001711	Farmers Insurance Building	Historic Building	Not eligible for NRHP; not evaluated for CRHR	Merced	1999	No
P-24-001713	Farmdale Slough Bridge	Historic bridge	Not eligible for NRHP; not evaluated for CRHR	Merced	1999	No
P-24-001714	Colony Slough Bridge	Historic bridge	Not eligible for NRHP; not evaluated for CRHR	Merced	1999	No
P-24-001715	**US Highway 99**	**Historic road**	**Not evaluated for NRHP or CRHR**	**Merced**	**1999**	**Yes**
P-24-001716	North Farmdale Slough Bridge	Historic bridge	Not eligible for NRHP; not evaluated for CRHR	Merced	1999	No
P-24-001808	Bettencourt Property	Historic dairy	Not eligible for NRHP; not evaluated for CRHR	Merced	2003	No
P-24-001809	Campos Property	Historic dairy	Eligible for CRHR	Merced	2003	No

(5) Native American Consultation

Senate Bill (SB) 18 (Chapter 905, Statutes of 2004), also published in the November 2005 Supplement to the *General Plans Guidelines* (State of California, Governor's Office of Planning and Research, 2005), requires all cities and counties to contact, and consult with, on a

government-to-government level, California Native American tribes before amending or adopting a General Plan or Specific Plan.

The City of Merced contacted the California NAHC to obtain information regarding the location of any potential sacred sites that may be impacted by the Specific Plan. According to the NAHC, no Native American cultural resources were identified for the project area in the Sacred Lands File. The NAHC recommended three Native American contacts that might have knowledge about the project area. On September 21, 2006, the City sent letters to the Amah Mutsun Tribal Band, Southern Sierra Miwuk Nation, and North Valley Yokuts Tribe inviting them to participate in government-to-government consultations.

Katherine Erolinda Perez of the North Valley Yokuts Tribe requested information about the project to help make a decision as to whether or not consultations would be necessary. The information available to the City was shared; no further requests were made. The other tribes have yet to respond to the City's formal request for consultation (under the guidelines set forth in SB 18, tribes have a 90-day response period).

f. Project Design Elements that Avoid Cultural Resources Impacts

At this point in the planning process of the South Merced Specific Plan project, no specific project design elements that avoid cultural resources impacts have been identified. However, CEQA Guidelines 15002[1][a][3]; 15021[a][2]; and 15091[a][1]) require the identification of ways environmental damage can be avoided or reduced and ways to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible. For example, by not taking certain actions or parts of actions, the project can avoid any type of significant impact. Therefore, the project design elements should avoid known and potential cultural resources impacts.

g. Adopted Policies and Regulations that Avoid Cultural Resources Impacts

(1) City of Merced Municipal Code Regarding Historic Preservation

The following policies and regulations from the City of Merced Municipal Code are designed to minimize the impacts (e.g., unnecessary destruction, impairment, and neglect) to Merced's structures, sites, and areas of special character or special historical, architectural, or aesthetic interest or values.

(a) 17.54.040 Powers and Duties (of Historic Preservation Commission)

This code grants Merced's Historic Preservation Commission the powers and duties to designate historic resources; review applications and issue certificates for alteration for construction, alteration, or demolition of designated historic properties; consult with groups, agencies, and citizens; disseminate information to the public; and consider methods to achieve preservation.

(b) 17.54.050 Criteria for Historic Designation and 17.54.060 Procedures for Historic Designation

Code 17.54.050 establishes the 11 criteria used by the Historic Preservation Commission to consider a proposal for designation of an historic resource or historic district. Code 17.54.060 establishes the procedures for the public and Historic Preservation Commission in the designation process.

(c) 17.54.100 Certificate for Alteration

This code states that no person shall cause or execute any material change through alteration, construction, relocation, or demotion to an historic resource without a certificate for alteration as approved by at least four affirmative votes of the commission.

(d) 17.54.130 Duty to Keep in Good Repair

This code discusses the responsibilities of the owner, occupant, or other person in actual charge of an historic resource or district to keep the exterior features and interior portions of the property in good repair to prevent deterioration and decay.

(2) Merced GP Policies Regarding Historic and Cultural Resources

The following policies found in the Merced GP are designed to minimize cultural resources impacts.

(a) GP Policy SD-2.1: Identify and Preserve the City's Archaeological Resources

- 2.1.a: Utilize the inventory of known archeological sites maintained at the Central California Information Center for the review of development proposals.
- 2.1.b: Utilize standard practices for preserving archeological materials that are unearthed during construction, as prescribed by the State Office of Historic Preservation.
- 2.1.c: If appropriate, consider reconstruction of archaeological sites in City parks, on school grounds, in open space areas, or other suitable locations where they can serve an educational purpose.

(b) GP Policy SD-2.2: Identify and Preserve the City's Historic and Cultural Resources

- 2.2.a: Expand City cultural and historic information resources.
- 2.2.b: Support community groups and individuals working to preserve, protect and enhance the City’s Historic and Cultural Resources.
- 2.2.c: Review and revise, as necessary, the City’s development/construction regulations to facilitate the preservation of historic structures.

- 2.2.d: Support, as feasible, efforts to promote the preservation of historically or architecturally significant structures in the City.

(3) Senate Bill (SB) 18, Chapter 905, Statutes of 2004 (also published in the November 2005 Supplement to the *General Plans Guidelines* [State of California, Governor's Office of Planning and Research, 2005])

This part of SB 18 requires all cities and counties to contact and consult with, on a government-to-government level, California Native American tribes prior to amending or adopting a GP or SP.

2. CONSIDERATION AND DISCUSSION OF SIGNIFICANT ENVIRONMENTAL IMPACTS

a. Environmental Considerations Suggested in CEQA

Public Resources Code (PRC) §5020.1(j) identifies historic resources (i.e., cultural resources) as "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." Historically significant resources are listed or eligible for listing in the California Register of Historic Resources (CRHR) if they meet at least one of the following four criteria:

1. Associated with significant events in the broad patterns of California's history and cultural heritage;

2. Associated with the lives of persons important to the past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

These criteria are codified as PRC §5024.1(c)(1-4). In addition, the fact that a resource is not listed in, or determined to be eligible for listing in, the CRHR, not included in a local register of historical resources, or identified in an historical resources survey does not preclude a lead agency from determining the resource may be an historical resource (as outlined in PRC §5024.1).

Thus, any project that has a significant effect or causes a "substantial adverse change" on a significant historic resource (i.e., a resource eligible for the CRHR) is a project that has a significant effect on the environment, per CEQA. A significant effect, then, is any change in a resource that makes it ineligible for the CRHR, and a CEQA environmental document must address means to lessen or mitigate these adverse impacts.

Paleontological resources are not typically considered cultural resources, but for the purposes of CEQA they have been placed into the CEQA Appendix G checklist. Paleontological resources are the mineralized (fossilized) remains of prehistoric plant and animal organisms, as well as the mineralized impressions (trace fossils) left as indirect evidence of the form and activity of such organisms. Under Appendix G of the CEQA guidelines, a project would have potentially significant impacts if it would directly or indirectly destroy a unique paleontological resource or site or a unique geologic feature.

Although CEQA does not explicitly define a "unique paleontological resource," for purposes of this EIR, the relevant provisions of the statute used to define a "unique archaeological resource" (PRC §21083.2) are employed. That is, "a unique paleontological resource" is a fossil or paleontological locality for which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability it:

- Contains information needed to answer important scientific questions and there is a demonstrable public interest in that information; or
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.

b. Rationale for Establishing Local Thresholds

The rationale for establishing thresholds was done consistent to the CEQA policies and guidelines outlined in CEQA Guideline §15064.5 and CEQA Appendix G, the Merced County Code, and the City of Merced Municipal Code.

c. Thresholds of Significance Adopted in this EIR

The cultural resources at the proposed project site were evaluated in accordance with the methodologies and information provided by Appendix G of the CEQA Guidelines. Appendix G of the CEQA Guidelines suggests that a development project could have a significant impact on a cultural resource if the project would cause any of the following effects.

i. Cause a substantial adverse change in the significance of an historical resource as defined in CEQA Guideline §15064.5; specifically, a substantial adverse change means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

ii. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guideline §15064.5, which would include direct impacts (e.g., great disturbance, increased water exposure, etc.) or indirect impacts (e.g., increased exposure to vandalism by increasing site accessibility).

iii. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

iv. Disturb any human remains, including those interred outside of formal cemeteries.

Item (i) of the CEQA environmental thresholds was not adopted for this EIR since the Specific Plan will not involve a land use that would typically divide a community, such as a freeway or railroad. The land-use concept prepared for the Specific Plan is designed to improve connectivity and access between the commercial and residential developments within Specific Plan area. In addition to a proposed circulation system that improves connectivity and access within the Specific Plan area and adjacent areas of South Merced, the land-use concept includes linear pathways that would occur throughout the residential areas and adjacent to other land uses.

Item (ii) of the CEQA environmental thresholds was adopted for this EIR since there is the potential for the Specific Plan to conflict with specific land-use policies found in the *Merced Vision 2015 General Plan*.

Item (iii) of the CEQA environmental thresholds was not adopted for this EIR since there are currently no habitat conservation plans or natural community conservation plans that have been adopted for the General Plan area. Merced County had been pursuing development of a Habitat Conservation Plan but is no longer pursuing one (Smith, 2005).

d. Regulatory Setting

(1) Federal

It is anticipated that this project will not involve lands owned or controlled by any federal agency or require a discretionary permit from a federal agency. Accordingly, a federal regulatory setting is not necessary. If the project, at any point, has federal involvement, then the appropriate federal regulations must be adhered to.

(2) State

(a) California Environmental Quality Act, §21084.1: "Historical Resource; Substantial Adverse Change"

An historical resource is a resource listed in, or determined to be eligible for listing in, the CRHR. Historical resources as defined in subdivision (k) of Section 4020.1, and included as such in a local register, or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, are presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant. The fact that a resource is not listed in, or determined to be eligible for listing in, the CRHR, not included in a local register, or not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 shall not preclude a lead agency from determining whether the resource may be an historical resource.

(b) California Environmental Quality Act, §15064.5: "Determining the Significance of Impacts to Archeological and Historical Resources"

A resource shall be considered to be historically significant if it meets the criteria for listing on the CRHR (PRC 5024.1, Title 14 CCR, Section 4852), including the following:

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- It is associated with the lives of persons important in our past.
- It 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.
- It has yielded, or may be likely to yield, important information in prehistory or history.
- The fact that a resource is not listed in, or determined to be eligible for listing in, the CRHR, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the PRC), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the PRC) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.
- An adverse effect on a cultural resource is defined as:
- A substantial adverse change in the significance of an historical resource by physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings.
- A change that demolishes or materially alters those physical characteristics of an historical resource that convey its significance and that justify its inclusion.

(c) California Health and Safety Code, Section 7052

Section 7052 of the California Health and Safety Code establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

(d) California Penal Code, Section 622.5

Section 622.5 of the California Penal Code establishes a misdemeanor penalty for injuring or destroying objects of historical or archaeological interest located on public or private lands, but specifically excludes the landowner.

(e) California Register of Historical Resources

In 1992, the California Legislature established the CRHR. The CRHR is used as a guide by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from substantial adverse change. The CRHR, as instituted by the California PRC, automatically includes all California properties already listed in the NRHP and those formally determined to be eligible for the NRHP (Categories 1 and 2 in the State Inventory of Historical Resources), as well as specific listings of State Historical Landmarks and State Points of Historical Interest.

A property must meet at least one of the following criteria to be eligible for inclusion in the CRHR.

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- It is associated with the lives of persons important in our past.
- It 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.
- It has yielded, or may be likely to yield, information important in prehistory or history.
- In addition to meeting at least one of the criteria, the resource must retain its historic integrity. Integrity is the ability of a property to convey its significance. Historic integrity is the composite of seven qualities, which include: location, design, setting, feeling, location, workmanship, and association.

The CRHR may also include various other types of historical resources that meet the criteria for eligibility, including the following:

- Individual historic resources;
- Resources that contribute to an historic district;
- Resources identified as significant in historic resource surveys; and
- Resources with a significance rating of Category 3 through Category 5 in the State Inventory (Categories 3 and 4 refer to potential eligibility for the NRHP; Category 5 indicates a property with local significance).
- The California Register follows the lead of the NRHP in utilizing a 50-year threshold for evaluating and recording buildings. The 50-year threshold is a general estimate of the time needed to develop historical perspective. However, this threshold is not absolute; it was chosen as a reasonable span of time after which a professional

evaluation of historical value/importance can be made. In fact, the California Office of Historic Preservation (OHP) suggests recording any physical evidence of human activities over 45-years old. The 45-year recommendation recognizes that there is commonly a 5-year lag between resource identification and the date that planning decisions are made.

- It has been determined that previously identified archaeological sites that occur within the project area are not eligible for inclusion under the CRHR.

(f) State Historic Resources Commission and the Office of Historic Preservation

In accordance with state law (PRC Section 5020.4), the primary responsibility of the State Historic Resources Commissions (SHRC) is to review applications for listing historic and archaeological resources on the CRHR and the CHL and CPHI registration programs.

The SHRC also is charged with the following responsibilities.

- Conduct a statewide inventory of historical resources and maintain comprehensive records of these resources.
- Develop and adopt criteria for the rehabilitation of historic structures.
- Establish policies and guidelines for a comprehensive statewide historical resources plan.
- Submit an annual report to the Director of the Department of Parks and Recreation and the State Legislature giving an account of its activities, identifying unattained goals of plans and programs, and recommending needed legislation for the support of these programs.
- Consult with and consider the recommendations of public agencies, civic groups, and citizens interested in historic preservation.
- Develop criteria and procedures based on public hearings and active public participation for the selection of projects to be funded through the National Historic Preservation Fund and other federal and state grants-in-aid programs.

The OHP is the governmental agency primarily responsible for the statewide administration of the historic preservation program in California. The chief administrative officer for the OHP is the State Historic Preservation Officer (SHPO). The SHPO is also the executive secretary of the SHRC. The mission of the OHP and the SHRC, in partnership with the people of California and governmental agencies, is to preserve and enhance California's irreplaceable historic heritage as a matter of public interest so that its vital legacy of cultural, educational, recreational, aesthetic, economic, social, and environmental benefits will be maintained and enriched for present and future generations.

The OHP is responsible for carrying out its mission by meeting the following goals:

- Identifying, evaluating, and registering historic properties;
- Ensuring compliance with federal and state regulatory obligations;
- Cooperating with traditional preservation partners while building new alliances with other community organizations and public agencies;
- Encouraging the adoption of economic incentives programs designed to benefit property owners; and
- Encouraging economic revitalization by promoting an historic preservation ethic through preservation education and public awareness, and, most significantly, by demonstrating leadership and stewardship for historic preservation in California.

(g) Senate Bill 18

SB 18 requires local governments to consult with tribes prior to making certain planning decisions and to provide notice to tribes at certain key points in the planning process. These consultation and notice requirements apply to the adoption and amendment of both General Plans and Specific Plans (defined in Government Code §65300 and 65450, et seq.). The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land-use decisions, for the purpose of protecting, or mitigating impacts to, traditional tribal cultural places (TCPs). Cities and counties must send their plan proposals to, and conduct consultation with, the Native American Tribes that are on the NAHC contact list and have traditional lands located within the city or county's jurisdiction.

(3) Local

(a) City of Merced Municipal Code

“Chapter 17.54 HISTORIC PRESERVATION” of the City of Merced Municipal Code discusses the policies and regulations of the City of Merced concerning identification, eligibility, and alteration of its historic resources. These policies and regulations include: 17.54.010 Findings and Purposes; 17.43.020 Definitions; 17.54.030 Historic Preservation Commission; 17.54.040 Powers and Duties; 17.54.050 Criteria for Historic Designation; 17.54.060 Procedures for Historic Designation; 17.54.100 Certificate for Alteration; 17.54.110 Termination of Certificate of Alteration; 17.54.120 Ordinary Maintenance and Repair; 17.54.130 Duty to Keep in Good Repair; 17.54.200 Enforcement; and 17.54.300 Penalties.

(b) Merced County Code

“Chapter 18.3.3.040(C)(2)(a)(iv)(b) Master Plan” of the Merced County Code describes the County’s policy of preserving as part of a comprehensive open space system significant natural areas of high historic, cultural, or scenic value that are not suitable for development.

"Chapter 18.34.020 Definitions" of the Merced County Code defines a historic structure. A historic structure is defined as:

1. Listed individually in the National Register of Historic Places (a listing maintained by the U.S. Department of the Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;

2. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;

3. Individually listed on a state inventory of historic places, in states with historic preservation programs which have been approved by the Secretary of the Interior; or

4. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified by an approved state program as determined by the Secretary of the Interior in states with approved programs.

(c) Merced GP

The following policies found in the Merced GP are designed to minimize cultural resources impacts.

- GP Policy SD-2.1: Identify and Preserve the City's Archaeological Resources.
  - 2.1.a: Utilize the inventory of known archeological sites maintained at the Central California Information Center for the review of development proposals.
  - 2.1.b: Utilize standard practices for preserving archeological materials that are unearthed during construction, as prescribed by the State Office of Historic Preservation.
  - 2.1.c: If appropriate, consider reconstruction of archaeological sites in City parks, on school grounds, in open space areas, or other suitable locations where they can serve an educational purpose.
- GP Policy SD-2.2: Identify and Preserve the City's Historic and Cultural Resources.
  - 2.2.a: Expand City cultural and historic information resources.
  - 2.2.b: Support community groups and individuals working to preserve, protect and enhance the City's Historic and Cultural Resources.
  - 2.2.c: Review and revise, as necessary, the City's development/construction regulations to facilitate the preservation of historic structures.
  - 2.2.d: Support, as feasible, efforts to promote the preservation of historically or architecturally significant structures in the City.

e. Significant Direct Impacts

Impacts CUL-1 through CUL-3 and CUL-5 are considered potentially significant impacts which can be mitigated to less-than significant. CUL-4 is a less than significant impact without mitigation.

(1) Impact CUL-1 (Archeological Resources)

The development of the South Merced urban development area has the potential to disturb or destroy archaeological resources. This is considered a potentially significant impact.

Although there are no known archaeological resources within the specific plan area, less than 25 percent of the area has been surveyed. Therefore, without requiring an inadvertent discovery clause, this impact would remain potentially significant. This conclusion is based on the records search for known resources in the project area, and study of the project area, as described and documented in Section C.1.e and in Appendix C: Cultural Resources.

(2) Impact CUL-2 (Human Remains)

The development of the South Merced urban development area has the potential to result in disturbance or destruction of human remains. This is considered a potentially significant impact.

The project initial study concluded the impact would be less than significant and noted the standard protocol for the accidental discovery of human remains. According to the Merced Vision 2015 General Plan EIR (p. 4.2), the cultural resources impacts of development as a result under the General Plan were determined to be not significant due to the normal operation of the City's development review process. However, as part of the EIR, a records search of the Specific Plan area was obtained from the Central California Information Center at California State University, Stanislaus (part of the California Historical Resources Information System) to determine if any significant cultural resources are present in the Specific Plan area..

There is one cemetery located within the Specific Plan area. Another cemetery exists immediately north of the plan area near the intersection of Childs and "B" Street. Although specific road projects have not been selected or designed and the scope of the Project seeks to explore various road alignments and improvements, the specific plan does not anticipate the need to take cemetery land for roadway purposes. To date, all efforts to construct roads adjacent to the cemeteries have been to avoid these uses. Although the specific plan is not proposing to build roads over or across any cemetery lands, due to the proximity of existing cemeteries with potential roadways, these issues will continue to be assessed during site-specific road improvement project. Under extraordinary circumstances, these future roadway projects may affect human remains.

However, if human remains are discovered during project construction, the specific protocol, guidelines and channels of communication outlined by the California Native American Heritage Commission (NAHC), and in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297),

and SB 447 (Chapter 44, Statutes of 1987) will be followed. Section 7050.5 (c) will guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the Merced County Coroner. The coroner has two working days to examine the remains after being notified by the person responsible for the excavation. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she will contact the NAHC by telephone within 24 hours.

(3) Impact CUL-3 (Paleontological Resources)

The development of the South Merced urban development area has the potential to disturb or destroy paleontological resources. This is considered a potentially significant impact.

It may not be possible to ascertain before project excavation whether significant fossils are present within a geologic formation at a specific project location. This analysis assumes that if the rock units in the geologic formations that are to be disturbed have a high or moderate potential to contain fossil materials, mitigation and monitoring will probably be required to minimize adverse impacts to significant fossils. There are no known paleontological resources within the project area, but geologic formations underlying (e.g., Mehrten Formation) and exposed at the ground surface within the project area (e.g., Modesto and Riverbank Formations) have a high potential to contain fossil materials. The Miocene and Pliocene-age Mehrten Formation underlies the Merced area at depths ranging from 200 to 500 feet (Page, 1977) and is unlikely to be disturbed by development.

Other than a relatively small area of young, unconsolidated surficial deposits in the western portion of the project area, all of the geologic formations exposed at the ground surface are part of the Pleistocene-age upper unit of the Riverbank Formation, lower member of the Modesto Formation, or upper member of the Modesto Formation (Marchand, 1976). Fossil vertebrates and plant remains have been previously reported from Riverbank and Modesto Formation sediments in their type areas and numerous other scattered locations. The closest known Pleistocene-age vertebrate locality is approximately 3 miles from the project site. Construction of roadways, buildings and structures, parking lots or structures, storm water detention basins, and utilities could disturb or destroy paleontological resources that might be present in geologic formations exposed at the site. These direct impacts also could result in the loss of geologic context, which is used to determine the age and significance of the resource. As defined in CEQA, when a paleontological resource meets the eligibility criteria of a “unique paleontological resource,” any disturbance to or removal of the resource would constitute a significant impact.

While the potential impacts associated with construction activities could result in damage or destruction of undiscovered fossil deposits, their detection before and during construction would make these resources accessible until they are again covered over by the proposed project. The discovery and concomitant salvage of these fossils by professionals would add to paleontological knowledge and would represent a beneficial impact of construction. The beneficial impact notwithstanding, indirect impacts of unauthorized collecting of significant fossils could occur or be increased by drawing attention to the presence and location of paleontological sites. The

improper removal of a significant or unique paleontological resource without controlled data recovery could result in significant impacts to paleontological resources.

(4) Impact CUL-4 (Illicit Collection)

The development of the South Merced urban development area has the potential to result in disturbance or destruction of potential cultural resources through incidental activity and increased accessibility, which could result in vandalism or illicit collection. This is considered a less-than-significant impact. Project sites, both public and private, will be secured from public access, and posted as such.

(5) Impact CUL-5 (Historic Structures)

To ascertain the presence and types of historic structures in the project area, records were searched at the CCIC. The records search identified 10 previously conducted cultural resource surveys and 3 previously recorded cultural resources within the South Merced SP project area. The surveys were conducted between 1975 through 2000, and the total survey coverage for the 10 surveys was less-than 25-percent of the total project area. Since a cultural resource survey of the entire project area has never occurred, the development of the South Merced urban development has the potential to impact historic buildings, structures districts, and objects through unanticipated discovery, demolition, or alteration of physical characteristics during subsequent project development. Therefore, this is considered a potentially significant impact.

However, 3 historic sites have been identified: a concrete ditch, a road and a cemetery. Other than the cemetery, the historic value of the road and the ditch are quite low given the City's established standards. Given the scarcity of known historic resources and low probability of finding others, limited mitigation is required.

f. Significant Cumulative Impacts

(6) Impact CUL-6

The development of the South Merced urban development area has the potential to lead to the continual loss and destruction of cultural resources.

3. MITIGATION MEASURES ADOPTED TO MINIMIZE SIGNIFICANT EFFECTS

a. Measures that Mitigate Direct Impacts

(1) Mitigation CUL-1 (Archeological)

For archaeological resources valuable primarily for their data potential, implementation of mitigation measure CUL-1will reduce potential impacts to a less-than-significant level.

The treatment of archaeological resources are found in PRC §21083.2. If a project will cause a significant impact to an archaeological resource, the lead agency may require protection through

conservation easements, capping or covering the site, planning to avoid impacts, or creating greenspace or parks. Most commonly, however, significant impacts to archaeological resources are mitigated through excavation or data recovery.

Mitigation CUL-1

All projects in the South Merced project area will be conditioned with an inadvertent-discovery clause. If an archaeological resource is uncovered during construction, work in the vicinity will halt until the potential resource has been evaluated by a qualified archaeologist. The project applicant will be required to develop and implement an archaeological testing program to evaluate the significance of the resource. If a resource is determined to be significant, and if it cannot be preserved intact through project design measures, then the project applicant will be required to retain a qualified archaeologist to design and carry out a treatment plan to document and recover the information potential of the site and/or preserve such scientific samples of the data for which the site is significant, as may be appropriate given the significance of the find. (Applicability—project level)

(2) Mitigation CUL-2

Implementation of mitigation measure CUL-2 will reduce the potential impact to a *less-than-significant* level.

Mitigation CUL-2

In the event the discovery of a burial, human bone, or suspected human bone, all excavation or grading in the vicinity of the find will halt immediately and the area of the find will be protected. The developer shall immediately notify the Merced County Coroner of the find and comply with the provisions of PRC §5097 with respect to Native American involvement, burial treatment, and re-interment. (Applicability—project level).

(3) Mitigation CUL-3

To mitigate potential significant impacts associated with project construction, mitigation measures CUL-3 would be implemented.

With the implementation of this mitigation measure, the impact to paleontological resources would be *less than significant*.

Mitigation CUL-3

Prior to any construction in the South Merced planning area, the project applicant will be required to inform construction personnel of the potential for encountering significant paleontological resources. All construction personnel will be informed of the need to stop work in the vicinity of a potential discovery until a qualified paleontologist has been provided the opportunity to assess the significance of the find and implement appropriate measures to protect or scientifically remove the find. Construction personnel also will be informed of the

requirement that unauthorized collection of fossil resources is prohibited (Applicability—project level).

(4) Mitigation CUL-4

To mitigate potential significant impacts associated with historic buildings, structures and objects, mitigation measures CUL-4a through 4b would be implemented. With the implementation of these mitigation measures, the impact to these resources would be *less than significant*.

(a) Mitigation CUL-4a

Before awarding construction or grading permits for individual projects within the South Merced planning area, the project Applicant will be required to retain a qualified architectural historian to conduct an architectural survey of historic sites to determine eligibility, and level of integrity of the built environment resources. The architectural historian will also reassess the integrity and eligibility for listing in the CRHR of any built environment cultural resources that have been identified previously in the project area. Built environment cultural resources that appear to be 45-years old or older will be recorded through the appropriate Department of Parks and Recreation (DPR) 523 series form and submitted to appropriate agencies and information repositories.

(b) Mitigation CUL-4b

Before any construction in the South Merced planning area, the project Applicant shall retain a qualified architectural historian and other appropriate personnel to develop mitigation measures for any impact to a significant built environment resource affected by the project. This includes:

- Avoiding or minimizing the impact to a historic resource through project redesign or not taking certain actions of the proposed project;
- Following the Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings);
- Preparation of HABS/HAER/Historic American Landscape Survey (HALS) Level 1-3 documentation;
- Preparation and execution of an Historic Structures Report (as described in the National Parks Service *Preservation Brief 43: The Preparation and Use of Historic Structures Report* [National Park Service, 2004]);
- Preparation and execution of a Built Environment Treatment and Construction Monitoring Plan (if applicable) for Direct and Indirect Impacts;
- Public notice of availability of significant buildings and structures for relocation to alternate sites;

- Development of a Historic Context for the Project Area, which would be a planning tool for understanding the larger trends and patterns in history in which the historic resources are understood;

- Preparation of oral histories and statements of individuals and groups associated with the historic resources; and

- Development of a local history unit for City of Merced elementary schools, which would discuss significant historic themes and patterns associated with the area.

Implementation of these mitigation measures will reduce the level of impact to built environment resources to *less than significant*.

b. Measures that Mitigate Cumulative Impacts

(1) Mitigation CUL-6

Three 3 historic sites have been identified: a concrete ditch, a road and a cemetery. Other than the cemetery, the historic value of the road and the ditch are quite low given the City's established standards. Given the scarcity of known historic resources and low probability of finding others no additional mitigation is required. Through successful implementation of the mitigation measures for the direct impacts, it is anticipated that the level of cumulative impact to cultural resources would be *less than significant*.

D. HAZARDS AND HAZARDOUS MATERIALS

This section evaluates the potential impacts related to hazards and hazardous materials from the implementation of the South Merced Specific Plan. Where significant effects are identified, mitigation measures are provided to reduce impacts to the extent feasible.

1. ENVIRONMENTAL SETTING

The following information is provided in accordance with Section 15125 of the CEQA Guidelines. This subsection provides a baseline for determining whether the Specific Plan impacts will be significant.

a. Study Area for Direct Impacts

The study area for impacts related to hazards and hazardous materials is the Specific Plan area. This area was selected because of the presence of existing industrial uses and the area's proximity to the Merced Municipal Airport. The Airport influence area covers all land within the western portion of the Specific Plan area west of Tyler Road.

b. Surrounding Area

The area to the west and south of the Specific Plan area is primarily farmland; it is designated on the County General Plan as A-1-General Agriculture (Merced County, 1990). The area north and east of the planning area is mapped as City Plan Area and is developed for urban uses.

c. Study Area for Cumulative Impacts

The study area for cumulative impacts related to hazards and hazardous materials is the City of Merced. This area was selected as the study area because hazardous wastes in this area are regulated by the City of Merced. With respect to airport safety issues, the study area for cumulative effects is the same as for direct project-related effects. Castle Airport (formerly Castle Air Force Base and now used as a general aviation airport in Atwater) is several miles to the northwest of the Specific Plan area. The Airport Influence Area Boundary for Castle Airport is entirely north of SR 99, well away from the South Merced Specific Plan area. For this reason, there are no cumulative or additive effects related to the Castle Airport, and issues related to Castle Airport will not be discussed further in this EIR.

d. Methods

This analysis was prepared, in part, by reviewing the policies and regulations found in the *Merced County Airport Land Use Compatibility Plan* (Merced County, 1999). The USEPA EnviroFacts database also was reviewed to determine whether any hazardous materials or waste sites are in the Specific Plan area (USEPA, Undated).

e. Existing Physical Conditions in the Study Area

Since the Specific Plan area contains several agricultural and industrial land uses; several hazardous material sites and generators are present in the area. Commercial/industrial uses tend to be concentrated along the major corridors in the Specific Plan area, such as SR 59. The agricultural land uses, such as dairies, that may generate hazardous wastes are in the eastern portion of the Specific Plan area. Hazardous material sites and generators for the Specific Plan area are listed in the USEPA EnviroFacts database (USEPA, Undated).

In addition, since the Specific Plan area is in the vicinity of the Merced Municipal Airport, adjacent land uses are subject to review by several agencies to ensure that structures do not pose an aviation hazard and that land uses are compatible. The *Merced County Airport Land Use Compatibility Plan* (Merced County, 1999) contains specific development restrictions for each of the safety zones designated for the airport. For example, in Zones B1 and B2, buildings have a height limit of 2 stories to prevent interference with the airport's flight paths.

f. Project Design Elements that Avoid Hazards and Hazardous Material Impacts

In an effort to avoid potential aviation hazards with Merced Municipal Airport, the land-use diagram for the Specific Plan proposes Industrial, Open Space, and Business Park land uses (as opposed to heavily populated land uses, such as commercial or residential) adjacent to the Runway Protection Zone (see Figure II-1). Furthermore, agricultural uses, with no intensive development, are planned for the Runway Protection Zone itself.

The circulation diagram for the Specific Plan provides for direct connectivity to the surrounding areas of the City of Merced as well as access to SR 99 via Childs Avenue and Mission Avenue. These design elements will assist in the event of an emergency evacuation.

g. Adopted Policies and Regulations that Avoid Hazards and Hazardous Material Impacts

(1) The City of Merced General Plan

The Merced Vision 2015 GP (City of Merced, 1997a) includes the following policies that address hazards and hazardous materials impacts.

- GP Policy S-7.2: Ensure that hazardous materials are cleaned up before a property is developed or redeveloped.
  - 7.2.a: Request an assessment of the past use of hazardous materials and soils analysis on proposed development sites.
  - 7.2.b: Continue to work with the State Department of Health Services and Merced County in developing cleanup programs for known hazardous waste sites within the Merced planning area.

- GP Policy S-5.1: Continue to protect approach areas and control zones for both existing and future runway systems through land use regulations and property acquisition where necessary.
  - 5.1.a: Retain existing agricultural land uses and discourage residential land use designations within the Merced Municipal Airport referral area.
  - 5.1.b. Limit industrial/commercial uses to those with peak occupancy levels of 25 persons/acre or less within Zone 2 of the Merced Municipal Airport referral area.
- Policy S-5.2: Prevent the encroachment of potential hazards to flight within the airport's airspace
- GP Policy S-5.2.a Continue to follow Federal Aviation Regulation standards regarding the maximum height of structures and other objects within the Merced Municipal Airport referral area.

(2) The City of Merced Municipal Code

This Code also defines the A-P-C zone around the airport and establishes height limits that reflect Federal Aviation Administration (FAA) and state requirements.

2. CONSIDERATION AND DISCUSSION OF SIGNIFICANT ENVIRONMENTAL IMPACTS

The following information is provided in accordance with Section 15126.2 of the CEQA Guidelines and the City of Merced adopted thresholds of significance specified in the *Merced Vision 2015 General Plan EIR.* The local thresholds are in addition to those required pursuant to CEQA.

a. Environmental Considerations Suggested in CEQA

Appendix G of the CEQA Guidelines suggests that a project could have a significant impact related to hazards or hazardous materials if the project would:

i. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

ii. 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.

iii. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

iv. Be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.

v. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area.

vi. For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.

vii. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

viii. 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.

b. Rationale for Establishing Local Thresholds

Consistent with CEQA Guidelines, the City of Merced, through the adoption of the *Merced Vision 2015 General Plan EIR,* adopted several thresholds of significance that are used in determining the South Merced Specific Plan's impact on hazards and hazardous materials. Adoption of these thresholds allows the City of Merced to provide standards of significance in addition to those provided solely by CEQA. These thresholds are described in detail hereafter.

c. Thresholds of Significance Adopted in This EIR

The City of Merced, as the Lead Agency, used the following significance criteria in the *Vision 2015 General Plan Program EIR*, consistent with CEQA Guidelines, and has determined that potential significant impacts greater than those identified in the General Plan EIR related to hazards and hazardous materials will result if:

i. The Specific Plan would involve transporting or disposal of hazardous materials, which could be accidentally released within one-quarter mile of an existing school or a proposed school site under the Specific Plan;

ii. The Specific Plan would involve construction on a hazardous materials site (as identified on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5);

iii. The Specific Plan Area would be located where an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, resulting in a safety hazard for people residing or working in the project area;

iv. The Specific Plan would impair implementation of, or physically interfere with, the City's Emergency Plan;

d. Regulatory Setting

The storage, use, and handling of hazardous materials by industries and businesses are subject to various federal and state regulations. A brief overview of these regulations follows.

(1) Federal

(a) Resource Conservation and Recovery Act of 1976 (RCRA)

The principal federal legislation is the Resource Conservation and Recovery Act (RCRA), which is administered by the USEPA. RCRA places reporting, permitting, and operational control requirements on those who generate, treat, store, or dispose of hazardous waste. The federal Hazardous Materials Transport Act, administered by the U.S. Department of Transportation, requires detailed manifesting and reporting of hazardous materials shipped on the U.S. highway system; it also contains packaging requirements for shipped materials. The CWA, also administered by the USEPA, controls the discharge of hazardous materials or hazardous waste to waters of the U.S. or to local wastewater treatment plants.

RCRA is the nation's hazardous waste control law. It defines hazardous waste, provides for a cradle-to-grave tracking system and imposes stringent requirements on treatment, storage and disposal facilities. RCRA requires environmentally sound closure of hazardous waste management units at treatment, storage, and disposal facilities.

(b) Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly referred to as Superfund, was enacted on December 11, 1980. The purpose of CERCLA is to provide authorities with the ability to respond to uncontrolled releases of hazardous substances from inactive hazardous waste sites that endanger public health and the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for the liability of persons responsible for releases of hazardous waste at such sites, and established a trust fund to provide for cleanup when no responsible party could be identified.

(c) The Superfund Amendments and Reauthorization Act (SARA)

SARA amended CERCLA on October 17, 1986. This amendment increased the size of the Hazardous Response Trust Fund to $8.5 billion, expanded USEPA's response authority, strengthened enforcement activities at Superfund sites, and broadened the application of the law to include federal facilities. In addition, new provisions were added to the law that dealt with emergency planning and community right to know. SARA also required USEPA to revise the Hazard Ranking System to ensure that the system accurately assesses the relative degree of risk

to human health and the environment posed by sites and facilities subject to review for listing on the National Priorities List.

(d) U.S. Department of Transportation (DOT)

The DOT regulates the interstate transport of hazardous materials and waste through implementation of the Hazardous Materials Transportation Act. This act specifies driver-training requirements, load labeling procedures, and container design and safety specifications.

(e) Federal Aviation Administration

FAA regulations require notification of the FAA (on FAA Form 7460-1) regarding the placement of any structure over 200 feet high or any structure that extends into the geometric shapes that are defined around airport runways. For the South Merced Specific Plan area, a horizontal surface 150 feet above ground level extends 10,000 feet from the airport runway and includes the western two-thirds of the Specific Plan area. More restrictive (i.e., lower) notification limits are defined by geometric shapes closer to the runway, but these affect only the southwestern corner of the Specific Plan area (extending only about 200 feet into the project area).

(2) State

(a) Hazardous Substance Account Act (1984), California Health and Safety Code Section 25300 ET SEQ (HSAA)

This act, known as the California Superfund, has three purposes: 1) to respond to releases of hazardous substances; 2) to compensate for damages caused by such releases; and 3) to pay the state's 10% share in CERCLA cleanups. Contaminated sites that fail to score above a certain threshold level in the EPA's ranking system may be placed on the California Superfund list of hazardous wastes requiring cleanup.

(b) California Environmental Protection Agency (Cal/EPA)

The Cal/EPA was created in 1991 to enhance coordination of state environmental programs, reduce administrative duplication, and address the most substantial environmental/ health risks. Cal/EPA unifies the state's environmental authority under a single accountable, Cabinet-level agency.

(c) Department of Toxic Substance Control (DTSC)

Cal/EPA has regulatory responsibility under CCR Title 22 for administration of the state and federal Superfund programs for the management and cleanup of hazardous materials. The DTSC is responsible for regulating hazardous waste facilities and overseeing the cleanup of hazardous waste sites in California. The Hazardous Waste Management Program (HWMP) regulates hazardous waste through its permitting, enforcement, and Unified Program activities.

(d) California Occupational Safety and Health Administration (Cal/OSHA)

The Cal/OSHA and the federal OSHA are the agencies responsible for assuring worker safety in the handling and use of chemicals in the workplace. Pursuant to the Occupational Safety and Health Act of 1970, federal OSHA has adopted numerous regulations pertaining to worker safety, contained in CFR Title 29 (29 CFR). These regulations set standards for safe workplaces and work practices, including standards relating to hazardous material handling. Cal/OSHA assumes primary responsibility for developing and enforcing state workplace safety regulations.

(e) Hazardous Materials Transport

California law requires that Hazardous Waste (as defined in California Health and Safety Code Division 20, Chapter 6.5) be transported by a California registered hazardous waste transporter that meets specific registration requirements. The requirements include possession of a valid Hazardous Waste Transporter Registration, proof of public liability insurance, which includes coverage for environmental restoration, and compliance with California Vehicle Code registration regulations required for vehicle and driver licensing.

State agencies tasked with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and Caltrans. Together, these agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roads. The CHP only designates state and federal roadways as hazardous materials truck routes.

(f) Airport Safety Issues

The Caltrans Division of Aeronautics must be notified, and investigate the proposed location, of any school site within 2 miles of an airport. The proposed school site in the Specific Plan Area is within this notification distance (as are other existing schools in the vicinity).

The California Public Utilities Code (Section 21659) prohibits the erection of structural hazards near airports and requires the review of all land-use decisions within defined airport influence areas by the Airport Land Use Commission, as described hereafter.

(3) Local

At the local level, existing plans and agencies guide and regulate the production, disposal, and transport of hazardous materials and hazardous waste management.

(a) Merced County Airport Land Use Compatibility Plan

In April 1999, the Merced County Airport Land Use Commission adopted the *Merced County Airport Land Use Compatibility Plan* (Merced County, 1999), which addresses Merced Municipal Airport. The Plan promotes compatibility between the airports in the County and the land uses that surround them through the establishment of compatibility zones surrounding the airports.

The five zones are described as follows.

- Zone A: This zone is the Runway Protection Zone where all structures are prohibited.
- Zone B1: This zone is the Approach/Departure Zone, which runs adjacent to the runway. In this zone, educational facilities, hospitals, and aboveground storage of hazardous materials are prohibited. There is also a 0.2 unit/acre maximum density requirement for this zone. The Specific Plan does not propose any houses in this area.
- Zone B2: This zone is the Extended Approach/Departure Zone. In this zone, educational facilities, hospitals, and aboveground storage of hazardous materials are prohibited. There is a 1.0 unit/acre maximum density requirement for this zone. The Specific Plan does not propose any houses in this area.
- Zone C: This zone is the Common Traffic Pattern zone. In this zone, educational facilities, hospitals, and libraries are prohibited. There is an 8 units/acre maximum density requirement for this zone. Zone C is not present in the Specific Plan area.
- Zone D: This zone is for Other Airport Environs and is the outermost zone of the airport. There are no development restrictions for this zone. The majority of the Specific Plan area falls within Zone D.

(b) Merced County Hazardous Waste Management Plan

Merced County prepared an HWMP in 1989 in accordance with California Health and Safety Code Section 24135, et seq. The plan addresses waste reduction and on-site treatment, the siting of off-site hazardous waste facilities, transportation of hazardous wastes, cleanup of contaminated sites, and emergency response procedures. The Merced County Division of Environmental Health enforces the plan and maintains a list of known hazardous waste sites within the County that is updated continuously. The Merced City Fire Department also works with the County Division of Environmental Health to prevent the accidental release of hazardous substances by conducting inspections of hazardous materials facilities and enforcing use and storage requirements.

(c) City of Merced Emergency Plan

This plan addresses various emergency situations and describes emergency evacuation routes and procedures for the City in the event that an incident occurs.

e. Significant Direct Impacts

(1) Impact HAZ-1

The Specific Plan would involve the transport or disposal of hazardous materials, which could be accidentally released within one-quarter mile of an existing school or proposed school sites under the Specific Plan. *This impact is not significant.*

Two schools are located in the South Merced Specific Plan area, Reyes Elementary School and Reyes Preschool. These schools are located at 123 South N Street. The nearest industrial land uses that are proposed under the Specific Plan are over ½ mile southeast of these schools. None of the truck routes that would be serving these industrial land uses are located alongside these schools.

(2) Impact HAZ-2

The Specific Plan will involve construction on a hazardous materials site (as identified on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5). With the implementation of GP policies, *this impact is less than significant.*

According to the USEPA EnviroFacts database search (USEPA, Undated) and the Merced County Division of Environmental Health, several hazardous materials sites are located in the Specific Plan area (See Appendix H of this EIR). However, development under the Specific Plan will be in compliance with regulations established by the State Department of Health Services and the Merced County HWMP, and policies found in the *Merced Vision 2015 General Plan*, as follows.

- Policy S-7.2: Ensure that hazardous materials are cleaned up before a property is developed or redeveloped.
  - 7.2.a: Request an assessment of the past use of hazardous materials and soils analysis on proposed development sites.

(3) Impact HAZ-3

The Specific Plan area will be located within an airport land-use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard for people residing or working in the project area. *This impact is less than significant.*

The Specific Plan area is within 2 miles of the Merced Municipal Airport. In an effort to minimize potential hazards associated with the Merced Municipal Airport, the land-use diagram for the Specific Plan proposes low-intensity land uses, such as industrial land uses (as opposed to land uses such as commercial and residential that carry higher population densities) adjacent to the Runway Protection Zone in accordance with the recommendations in the *Merced Vision 2015 General Plan* (p. 11-34) and the *Merced County Airport Land Use Compatibility Plan*. Furthermore, no development is planned for the Runway Protection Zone itself.

f. Significant Cumulative Impacts

There are no cumulative hazards impacts, beyond those impacts addressed above.

To avoid cumulative hazards impacts, all other development throughout the City of Merced is performed in compliance with regulations established by the State Department of Health Services and the Merced County HWMP, and policies found in the *Merced Vision 2015 General Plan*.

3. MITIGATION MEASURES ADOPTED TO MINIMIZE SIGNIFICANT EFFECTS

The following information is provided in accordance with Section 15126.4 of the CEQA Guidelines:

a. Measures that Mitigate Direct Impacts

Because project impacts related to hazards are less than significant, no mitigation is required.

b. Measures that Mitigate Cumulative Impacts

Because cumulative impacts related to hazards and hazardous materials would be less than significant, no mitigation is required.

E. LAND USE AND PLANNING

This section describes how development associated with the South Merced Specific Plan will affect land use and planning. Where significant effects are identified, mitigation measures are provided to reduce impacts to the extent feasible.

1. ENVIRONMENTAL SETTING

The following information is provided in accordance with Section 15125 of the CEQA Guidelines. This environmental setting is the baseline for determining whether the Specific Plan impacts will be significant.

a. Study Area for Direct Impacts

The study area for direct impacts related to land use and planning will be the Specific Plan area. This area was selected since the Specific Plan addresses proposed land uses for this area that should be consistent with land-use policies found in the *Merced Vision 2015 General Plan* (City of Merced, 1997a).

b. Surrounding Area

Surrounding land uses for the Specific Plan area include single-family and multi-family residential and commercial uses to the north, SR 99 to the east, agricultural and vacant land to the south, and single-family residences, industrial uses, and the Merced Municipal Airport to the west.

c. Study Area for Cumulative Impacts

The study area for potential cumulative impacts related to land use and planning includes the General Plan area for the City of Merced. This area was selected based on the jurisdictional boundaries of the GP that will be affected by development under the Specific Plan.

d. Methods

This analysis was prepared by reviewing the *Merced Vision 2015 General Plan* to determine the Specific Plan's consistency with the General Plan's land-use policies. In addition, the Specific Plan land use diagram and the GP land-use diagram were reviewed to determine where redesignations of land uses have been made in the Specific Plan.

e. Existing Physical Conditions in the Study Area

The Specific Plan area currently consists of a mix of rural residential, single-family residential, agricultural, and industrial land uses. Some commercial uses (e.g., single grocery/liquor store) exist. However, commercial uses are very limited.

f. Project Design Elements that Avoid Land Use and Planning Impacts

In an effort to avoid potential land-use incompatibility between the Merced Municipal Airport and sensitive receptors, the land-use concept for the Specific Plan proposes Industrial land uses (as opposed to sensitive land uses such as residential) adjacent to the Runway Protection Zone. Furthermore, no development is planned for the Runway Protection Zone itself.

g. Adopted Policies and Regulations that Avoid Land-Use and Planning Impacts

(1) City of Merced General Plan

The City of Merced General Plan includes the following policies and implementation actions, which address land-use and planning impacts.

- GP Policy L-1.5: Protect existing neighborhoods from incompatible developments.
  - 1.5.a: Continue to use the Interface Overlay Zone regulations for the review of proposed land uses adjacent to residential areas.
  - 1.5.b: Evaluate traffic and circulation generated by large scale commercial and industrial projects and limit their adverse impacts on residential areas.
- GP Policy L-2.2: Locate new or expanded industrial parks in appropriate areas.
  - 2.2.a: Industrial areas should be located where they will have good access to air transportation, rail transportation, or major highway transportation links.
  - 2.2.b: Industrial reserve areas should be protected from non-industrial use or premature development through agricultural zoning until such time as the land is needed for industrial development.
  - 2.2.c: Parcels of land in industrial reserve areas should remain as large as possible in order to accommodate a variety of plant sizes and types in the future.
- GP Policy L-2.4: Provide a range of services adjacent to and within industrial areas to reduce auto trips.
  - 2.4.b: Continue to allow services, such as restaurants and other retail commercial uses which mainly serve industrial employees, to locate in industrial zones as discretionary uses.
  - 2.4.c: Consideration should be given to provide attractive, efficient, and affordable means of mass transit between industrial areas and residential areas of the City.
  - 2.4.d: Consideration should be given to making changes to the Zoning Ordinance which allow for some commercial and service activities in and/or convenient to industrial areas

- GP Policy L-2.7: Locate and design new commercial development to provide good access from adjacent neighborhoods and reduce congestion on major streets.
  - 2.7.a: New retail commercial designations shall be located along arterials at their intersections with collector streets (at 1/4 mile or 1/2 mile locations) in new growth areas. These commercial areas should not be located at the intersections of two arterials.
  - 2.7.b: Commercial centers shall be designed to provide direct vehicular and pedestrian access from surrounding neighborhoods. In no case shall trips, which could be internal (from adjacent neighborhood to center), be forced onto an arterial.
  - 2.7.c: The number of commercial driveways on major streets shall be minimized and located in areas where they will cause minimal conflicts with traffic flow on major streets and through intersections.
  - 2.7.d: Cross-access and shared driveways between adjacent commercial uses shall be provided as much as feasible.
  - 2.7.e: Commercial developments shall be designed to encourage pedestrian, bicycle, and transit access.
- GP Policy L-3.1: Create land use patterns that will encourage people to walk, bicycle, or use public transit for an increased number of their daily trips.
  - 3.1.a: Encourage pedestrian or transit-friendly designs at suitable locations.
  - 3.1.b: Work to preserve and enhance existing neighborhoods and commercial districts, which have transit and pedestrian-friendly designs.
  - 3.1.c: Plan areas for higher density development within 1/4 mile of locations identified as transit hubs and commercial centers.
  - 3.1.d: Encourage higher housing densities in areas served by the full range of urban services.
  - 3.1.e: Encourage mixed-use developments that provide commercial services such as day care centers, restaurants, banks, and stores near employment centers.
  - 3.1.f: Work closely with school districts to help them choose school site locations that allow students to safely walk or bicycle from their homes.
  - 3.1.g: Encourage regional shopping malls/centers at sites capable of support by a full range of transportation options.
  - 3.1.h: Consider air quality and mobility when reviewing any proposed change to the land use pattern of this community.
- GP Policy L-3.3: Promote site designs that encourage walking, cycling, and transit use.

- 3.3.a: Encourage project designs that increase the convenience, safety and comfort of people using transit, walking or cycling.
- 3.3.b: Encourage all subdivision street and lot designs, commercial site plans, and multi-family site plans to improve access by transit, bicycle, and walking.
- 3.3.d: Encourage all development projects proposed within 2,000 feet of an existing or planned light rail transit, commuter rail, express bus or transit corridor stop, to incorporate site design measures that improve accessibility to the transit system.

- GP Policy UE-1.1: Designate areas for new urban development that recognize the physical characteristics and environmental constraints of the planning area.
  - 1.1.a Direct development away from significant concentrations of "Prime" agricultural soils and give priority to the conversion of non-prime agricultural land if reasonable alternatives exist.
  - 1.1.b Limit development and development related impacts on agricultural lands along the City's urban fringe.
  - 1.1.c Incompatible urban development shall not be approved in designated airport clear zones
  - 1.1.e Explore techniques to preserve areas of significant agricultural soils, aircraft noise and safety zones, buffers between cities, scenic areas, etc., from incompatible urban development.

(2) South Merced Specific Plan

The South Merced Specific Plan includes the following policies and implementation actions, which address land use and planning impacts.

- SP Policy CE-1.1 Provide opportunities for appropriate and varied commercial and industrial uses throughout the planning area.
  - 1.1.a Promote SH 59 south of Childs Avenue as a major auto service/agricultural service corridor.
  - 1.1.b Maintain industrial land use designations east of the airport, and south of Childs Avenue west of State Highway 99.
  - 1.1.c Provide zoning and seek to provide key services currently absent in the planning area, including but not limited to:
    - (a) Public services such as a fire station and schools,
    - (b) Health-care facilities;
    - (c) Neighborhood serving retail;

(d) Professional offices; and

(e) Banks and other financial-related offices.

- 1.1.d Develop regional-serving retail near the Mission Avenue/Hwy 99 interchange, such as major retail mall; "big-box" retail; freeway-oriented retail; and commercial recreational facilities.
- 1.1.e Support Business Park land uses located at the intersection of "R" Street and Gerard Avenue that provide a mixture of commercial and office uses that serve populations in both the industrial park to the southwest and residential neighborhood to the northeast, and discourage uses that do not.

- SP Policy CE-1.2 Use the City's "Urban Village" concept, policies and design guidelines for development in the planning area.
  - 1.2.a Develop the "Urban Village" on Mission Avenue, east of Tyler Road in accordance with the Urban Design Chapter of the Merced Vision 2015 General Plan, and the associated "Urban Village" policies of its Land Use and Transportation and Circulation Chapters.
  - 1.2.b While it is important to promote SH 59 south of Childs Avenue as a major auto service/agricultural service corridor, be flexible to allow for neighborhood serving retail, and where feasible require such development to be consistent with "Urban Village" design principles.

2. CONSIDERATION AND DISCUSSION OF SIGNIFICANT ENVIRONMENTAL IMPACTS

The following information is provided in accordance with Section 15126.2 of the CEQA Guidelines and the local City of Merced's adopted thresholds of significance specified in the *Merced Vision 2015 General Plan EIR* (City of Merced, 1997b). The local thresholds are in addition to those required pursuant to CEQA.

a. Environmental Considerations Suggested in CEQA

Appendix G of the CEQA Guidelines suggests that a project could have a significant impact related to land uses if the project would:

i. Physically divide an established community;

ii. Conflict with any applicable land-use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or

iii. Conflict with any applicable habitat conservation plan or natural community conservation plan.

b. Rationale for Establishing Local Thresholds

Item (i) of the CEQA environmental thresholds was not adopted for this EIR since the Specific Plan will not involve a land use that would typically divide a community, such as a freeway or railroad. The land-use concept prepared for the Specific Plan is designed to improve connectivity and access between the commercial and residential developments within the Specific Plan area. In addition to a proposed circulation system that improves connectivity and access within the Specific Plan area and adjacent areas of South Merced, the land-use concept includes linear pathways that will occur throughout the residential areas and adjacent to other land uses.

Item (ii) of the CEQA environmental thresholds was adopted for this EIR since there is the potential for the Specific Plan to conflict with the land use plan found in the *Merced Vision 2015 General Plan*.

Item (iii) of the CEQA environmental thresholds was not adopted for this EIR since there are currently no Habitat Conservation Plans or natural community conservation plans that have been adopted for the General Plan area. Merced County had been pursuing the development of a Habitat Conservation Plan but is no longer pursuing one (Smith, 2005).

c. Thresholds of Significance Adopted in This EIR

The City of Merced, as the Lead Agency, has adopted the following as a threshold of significance, consistent with CEQA Guidelines, and has determined that impacts related to land use will result if:

- The Specific Plan will conflict with land-use designations in the City of Merced General Plan.

d. Regulatory Setting

The South Merced Specific Plan area is located within the County of Merced and the City of Merced and is therefore regulated by their respective General Plans and Zoning Ordinances. Since a portion of the Specific Plan area is located outside of the Merced city limits, future annexation will be necessary to receive City services and utilities (e.g., water, sewer).

(1) City of Merced General Plan

The City of Merced General Plan has the following land-use designations for the Specific Plan area:

- Agricultural
- Business Park
- Residential Reserve
- General Commercial
- Low Density Residential

- Low to Medium Density Residential
- High to Medium Density Residential
- Industrial
- Regional Community Commercial
- Village Residential
- Professional Commercial Office
- Neighborhood Commercial
- School
- Park/Open Space/Recreation

(2) City of Merced Zoning Designations

The following City of Merced zoning designations exist in the Specific Plan area:

- (R-1) Low Density Residential
- (PD) Planned Development
- (A-1-20) Restricted Agriculture
- (I-L) Light Industrial District
- (C-G) General Commercial District
- (C-N) Neighborhood Commercial

(3) Merced County General Plan

The Merced County General Plan has the following land-use designation for the Specific Plan area:

- City Plan Area

(4) Merced County Zoning Ordinance

The Merced County Zoning Ordinance has the following zoning designations for the Specific Plan area:

- General Agricultural
- General Manufacturing
- (R-2)

The Specific Plan is located within the SUDP area. The southern boundary for the Merced SUDP runs along the southern boundary (Mission Avenue and Dickenson Ferry Road) of the Specific Plan Area.

e. Significant Direct Impacts

(1) Impact LU-1

The Specific Plan conflicts with land-use designations found in the City of Merced General Plan. Based upon the following analysis, *this impact is considered less than significant.*

Five general locations in the Specific Plan area have been redesignated from the existing General Plan designations as follows:

i. Residential Reserve to: Low Density Residential, Low Medium Density Residential, Village Residential, Regional Commercial, General Commercial, Neighborhood Commercial, Office, Industrial, Business Park, and Park/Open Space/Recreation.

ii. Regional Commercial to: Industrial

iii. Business Park to: Industrial and Regional Commercial

iv. Agricultural to: Industrial.

v. High Medium Density Residential to: Low Density Residential and Low Medium Density Residential (along Canal Street).

Item (i): The majority of changes in the land-use diagram occur in this category. The "Residential Reserve" land-use designation is considered to be a "holding" zone until more detailed land-use and circulation planning can be completed for the area (The *Merced Vision 2015 General Plan* discusses this issue in detail on page 3-61, which states in part: *"Present land use proposals, as depicted on the Land Use Diagram for South Merced, are considered "interim" land uses until such time as the specific plans for this area are completed and adopted. (The interim designation for most of these areas is "Residential Reserve.") These Specific plans are expected to result in modifications to the Land Use Diagram and would become Merced General Plan amendments subject to the requirements of state law for public hearings and review."* Hence, while the new designations are different, they are not viewed as incompatible or inconsistent with the *Merced Vision 2015 General Plan*.

Item (ii): In the *Merced Vision 2015 General Plan*, a large "Regional Commercial" land-use designation occurs at the southwestern corner of SR 99 and Childs Avenue.. Actual land uses consist of vacant lands intermixed with heavy commercial and light industrial land uses. It is important to note that other corners of the intersections of SR 99 and Childs Avenue and SR 99 and Mission Avenue contain or are planned to contain "Regional Commercial" land uses. These site conditions, and the identification of significant traffic impacts caused by regional traffic from future regional commercial use at this location, were the basis for the change in land-use designation from "Regional Commercial" to "Light Industrial." The "Light Industrial" designation has a

lower trip generation and is consistent with existing land uses. The Specific Plan shifts the "Regional Commercial" land use to a more compatible location.

Item (iii): The Specific Plan proposes to reduce the size of the "Business Park" designation at the northwest corner of SH99 and Mission Avenue by approximately one-third. The other two-thirds of the Business Park designation are distributed throughout the Specific Plan area provide for a greater diversity of industrial, retail and office uses in the planning area. This maintains the overall amount of Business Park designated lands (no net loss), and should reduce vehicle miles traveled by residents to obtain the services from such uses. The shifting of Business Park designation to other parts of the planning area allows the area to be used for other land uses that are more compatible with the site, namely regional commercial. The site contains essential components for such use, including: proximity to SH 99 and the Mission Avenue Interchange, frontage on a major arterial (Mission Avenue) with a controlled signalized access. The above noted changes are consistent with the policies of the *Merced Vision 2015 General Plan*. Hence, while the new designations are different, they are not viewed as incompatible or inconsistent with the *Merced Vision 2015 General Plan*.

Item (iv): The primary purpose of the agricultural designation is to protect Airport Influence Zone A, the "runway protection zone". There are other lands designated "agricultural" that extend outside of this zone, and onto Zones B1 and B2, which do permit urban density under limited circumstances. In the area to the northeast of the airport, the Specific Plan proposes industrial uses which can be considered compatible with the *Merced County Airport Land Use Compatibility Plan* when building height and occupancy limitations are followed..

Item (v): While the current designation of High Medium Residential Density overlays the area along Canal Street, the existing land uses have a lower land use density. The change to Low Density and Low Medium Density is to match the existing land uses.

The major purpose of the Specific Plan is to revitalize the South Merced area by providing a more diverse mix of land uses that allows greater economic vitality and overall sustainability for the community. At the same time, the Specific Plan's circulation diagram improves access to the other parts of the City, including the central business district. The Specific Plan uses the Village concept approach supported by the *Merced Vision 2015 General Plan*. Although the Specific Plan does propose different land use designations than currently occur at certain locations, the changes are consistent with policies of the Merced Vision 2015 General Plan and direction provided in *South Merced Strategic Plan*, and are therefore considered to be less than significant.

The entire Specific Plan effort directly supports the following *Merced Vision 2015 General Plan* policies and implementing actions that specifically address overall future development for the South Merced area and the Village concept.

Policies That Address South Merced

- SP Policy I-1.3 Cooperate with Merced area school districts to provide school sites that are centrally located to the populations they serve and adequate to serve community growth.
  - 1.3.a Work with the Weaver Union School District to designate an appropriately sited school north of the Mission Avenue Urban Village.
  - The Specific Plan addresses this policy by providing floating school sites north of the Mission Avenue Urban Village. The locations are identified in Figure IVE-1.
  - 1.3.b Work with the Merced Union High School District to designate an appropriately sited high school in the planning area. Said facility should not be located in or adjacent to industrially zoned lands, the airport, and State Highway 99, and should be consistent with the siting criteria of the City specified in the Merced Vision 2015 General Plan.
  - The Specific Plan addresses this policy by providing four locations for school sites that meet the City's siting criteria as specified in the *Merced Vision 2015 General Plan*. The locations are identified in Figure IVE-1.
- GP Policy L-2.1 Encourage further development of appropriate commercial and industrial uses throughout the City.
  - L 2.1.e Specifically target South Merced as an area that needs more commercial retail and office development.

    The Specific Plan addresses this policy by providing locations for commercial retail and office development throughout the Specific Plan area. The location and acreage proposed for commercial retail and office development by the Specific Plan are identified in Figure IVE-1 and Table IVE-1, respectively.
- GP Policy L-2.6 Provide neighborhood commercial centers in proportion to residential development in the city.
  - L 2.6.b Special emphasis should be placed on encouraging the development of neighborhood commercial center(s) in the general vicinity of the South SR 59 corridor to serve the needs of South Merced residents.

    The Specific Plan addresses this policy by providing a location for neighborhood commercial development adjacent to SR 59, just north of Mission Avenue. In addition, a location for neighborhood commercial development is provided on the eastern portion of the Specific Plan area to serve surrounding residential land uses. The location and acreages proposed for neighborhood commercial development by the Specific Plan are identified in Figure IVE-1 and Table IVE-1, respectively.

TABLE IVE-1[1]

Specific Plan Land-Use Development Potential

	Land Use	Rounded Acres	Percent of Total Land Use	Net Acres (-25% for streets)	Development Unit - Floor Area Factor	Development Units
Draft Land Use						
Agricultural	AG	63	3.1%	47		
School	SCH	29	1.4%	22		
Commercial – Neighborhood	CN	20	1.0%	15	0.25	
Commercial – General	COM	123	6.0%	92	0.25	
Commercial – Regional	CR	41	2.0%	31	0.25	
Commercial – Office	OFF	13	0.6%	10	0.25	
Subtotal		**197**		**148**	**1.00**	**–**
Residential – Low Density	LDR	997	48.6%	748	5.00	3,739
Residential – Medium Density	MDR	89	4.3%	67	9.00	601
Residential – Village (High) Density	VR	117	5.7%	88	18.00	1,580
Subtotal		**1,203**		**902**	**32.00**	**5,919**
Open Space – Park Recreation	PRK	66	3.2%	50		
Industrial	IND	368	17.9%	276	0.50	
Business Park	BP	125	6.1%	94	0.50	
Subtotal		**493**		**370**	**1.00**	**–**
TOTAL		**2,051**	**100.0%**	**1,538**	**34.00**	**5,919**
Draft Land Use Alternative						
Agricultural	AG	86	4.2%	65		
School	SCH	29	1.4%	22		
Commercial – Neighborhood	CN	45	2.2%	34	0.25	
Commercial – General	COM	123	6.0%	92	0.25	
Commercial – Office	OFF	3	0.1%	2	0.25	
Subtotal		**172**		**128**	**0.75**	**–**
Residential – Low Density	LDR	1,266	61.7%	950	5.00	4,748
Residential – Medium Density	MDR	29	1.4%	22	9.00	196
Subtotal		**1,295**		**971**	**14.00**	**4,943**
Open Space – Park	PRK	69	3.4%	52		
Industrial	IND	275	13.4%	206	0.50	
Business Park	BP	127	6.2%	95	0.50	
Subtotal		**402**		**302**	**1.00**	**–**
TOTAL		**2,053**	**100.0%**	**1,539**	**15.75**	**4,943**

Source: URS Corporation

[1] The environmental analysis is an approximation of the plan and there are slight differences in the assumed figures (dwelling units, land use acreages, etc.)

- GP Policy L-3.1 Create land use patterns that will encourage people to walk, bicycle, or use public transit for an increased number of their daily trips.

  – L-3.1.a Encourage pedestrian or transit-friendly designs at suitable locations.

    The Specific Plan addresses this policy by providing Neighborhood Commercial land uses within walking distance (approximately 1/2 mile) of residential land uses. The Plan also provides for high-density residential development that can support transit use for the Specific Plan area. The location and acreages proposed for neighborhood commercial and residential development by the Specific Plan are identified in Figure IVE-1 and Table IVE-1, respectively.

- GP Policy OS-3.2 Maintain and expand the City's bikeway and trail system.

  – OS-3.2.e Develop an off-street bikeway and trail system in South Merced.

    The Specific Plan addresses this policy by providing a series of pedestrian and bike pathways, as identified in the Official Bike and Pedestrian Circulation Map in the Specific Plan. This map provides for pedestrian pathways and bike paths that will allow pedestrians and bicyclists greater access to destinations within and outside of the Specific Plan area and enhance recreational opportunities, as well.

- GP Policy UE-1.1: Designate areas for new urban development that recognize the physical characteristics and environmental constraints of the planning area.

  – UE-1.1.a Direct development away from significant concentrations of "Prime" agricultural soils and give priority to the conversion of non-prime agricultural land if reasonable alternatives exist.

Policies That Address the Village Concept

- GP Policy UE-1.2: Promote a compact urban form.

  The Specific Plan addresses this policy by providing a diverse mix of residential land uses, including Village Residential (High Density). In addition, Neighborhood Commercial land uses are within walking distance (approximately 1/2 mile) of all residential land uses in the Specific Plan area. The location and acreages proposed for neighborhood commercial and residential development by the Specific Plan are identified in Figure IVE-1 and Table IVE-1, respectively.

- GP Policy L-3.2: Encourage infill development and a compact urban form.

  The Specific Plan addresses this policy by providing new infill residential, commercial, and industrial development that is compatible and complementary with surrounding existing land uses. The Specific Plan allows for a compact urban form by providing Neighborhood Commercial land uses within walking distance of high density Village Residential land uses, as well as the lower density residential land

uses existing or proposed in the Specific Plan area. The location and acreages proposed for neighborhood commercial and residential development by the Specific Plan are identified in Figure IVE-1 and Table IVE-1, respectively.

- GP Policy L-3.3: Promote site designs that encourage walking, cycling, and transit use.

  The Specific Plan addresses this Policy by providing Neighborhood Commercial land uses within walking distance (approximately 1/2 mile) of residential land uses. The Plan provides for a series of pedestrian and bike pathways, as identified in the Specific Plan's Official Bike and Pedestrian Circulation Map. This map provides for pedestrian pathways and bike paths that will allow pedestrians and bicyclists greater access to destinations within and outside the Specific Plan area and enhance recreational opportunities, as well. The Specific Plan also provides for high-density residential development that could support transit use for the Specific Plan area.

- GP Policy UD-1.1: Apply Urban Village design principles to new development in the City's new growth areas.

  The Specific Plan addresses this policy by providing Village Residential land use that is adjacent to Neighborhood Commercial land uses.

- GP Policy UD-1.2: Distribute and design Urban Villages to promote convenient vehicular, pedestrian, and transit access.

  The Specific Plan addresses this policy by providing Village Residential (High Density) land use that is in walking distance from Neighborhood Commercial land uses. This high-density residential development also can support transit use for the Specific Plan area. The location and acreages proposed for neighborhood commercial and residential development by the Specific Plan are identified in Figure IVE-1 and Table IVE-1, respectively.

f. Significant Cumulative Impacts

No cumulative impacts related to land use have been identified. Furthermore, the *Merced Vision 2015 General Plan EIR* addressed cumulative impacts related to land use in the Specific Plan area.

3. MITIGATION MEASURES ADOPTED TO MINIMIZE SIGNIFICANT EFFECTS

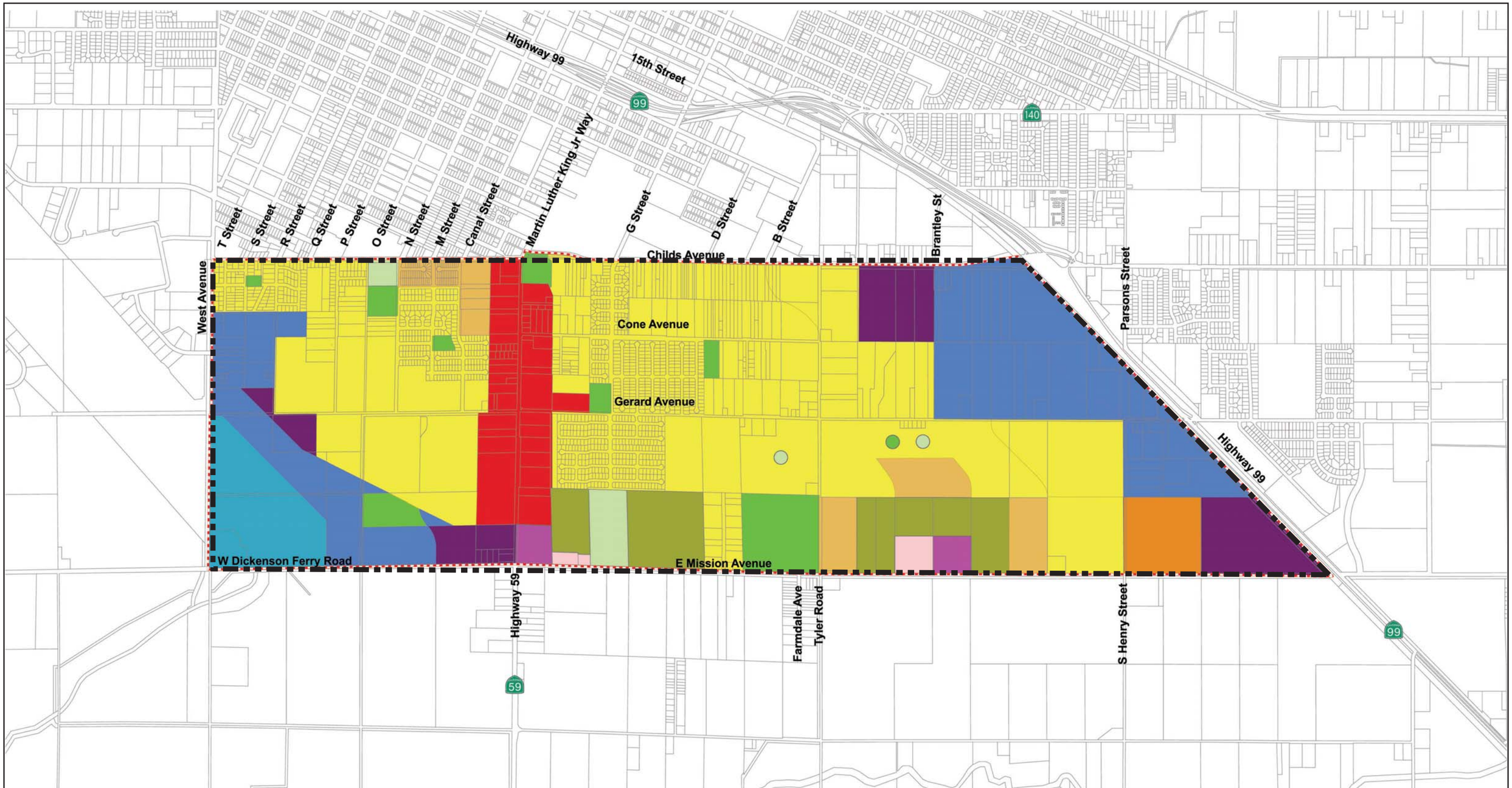
The following information is provided in accordance with Section 15126.4 of the CEQA Guidelines:

a. Measures that Mitigate Direct Impacts

Since no significant impacts related to land use have been identified, no mitigation measures are necessary.

b. Measures that Mitigate Cumulative Impacts

Since no significant impacts related to land use have been identified, no mitigation measures are necessary.



SOUTH MERCED SPECIFIC PLAN - LAND USE DIAGRAM

Figure IVE-1

Prepared map by permission of the City of Merced. 2005.

URS

LEGEND

- Specific Plan Boundary
- Agricultural
- Business Park (.5 FAR / 2,009,205 sq ft)
- Commercial - Regional Community (.25 FAR / 334,868 sq ft)
- Commercial - General (.25 FAR / 1,004,603 sq ft)
- Commercial - Neighborhood (.25 FAR / 163,350 sq ft)
- Commercial - Office (.25 FAR / 106,178 sq ft)
- Industrial (.5 FAR / 5,733,585 sq ft)
- Open Space / Park Recreation
- Residential - Low Density (7 DU/AC / 5,192 DUs)
- Residential - Low to Medium Density (12 DU/AC / 801 DUs)
- Residential - Village (18 DU/AC / 1,580 DUs)
- School
- Floating Park Site
- Floating School Site

N W E S

0 800 1,600 Feet

F. NOISE

1. ENVIRONMENTAL SETTING

The following information is provided in accordance with Section 15125 of the CEQA Guidelines.

a. Study Area for Direct Impacts

The project site and the residential areas generally located along collector and arterial streets between the project site and SR 99 to the northeast form the study area for direct impacts related to noise. This area was selected based on the potential noise impacts that the project may have within the project area and on adjacent existing residential areas.

b. Surrounding Area

Uses surrounding the Specific Plan Area consist of the Merced Municipal Airport (Macready Field) to the west; generally developed land with residential, commercial, and institutional uses in the City of Merced to the north (between the project area and SR 99); the Union Pacific Railroad tracks and SR 99 to the east; and agricultural uses with some residences to the south in unincorporated land in Merced County.

The airport, railroad, and state highway are the main noise sources in the surrounding area that may affect future uses in the Specific Plan. Residential uses to the north, with the City of Merced, along with existing hospitals and schools in this area, may be affected by increases in traffic noise as a result of development within the Specific Plan.

c. Study Area for Cumulative Impacts

The same surrounding area will be evaluated for cumulative noise impacts, including the South Merced Specific Plan area and the major travel corridors providing access to and from the area. These corridors will carry the largest changes in future traffic volumes resulting from the project and are reasonable subjects for an analysis of changes in noise levels. More distant streets in the City or region that also may be affected by project traffic were not analyzed because a significant traffic volume increase is necessary for a discernible increase in the logarithmic values used to describe noise levels.

d. Methods

Estimates of traffic noise levels generated within this EIR were prepared using calculation procedures published by the Federal Highway Administration (FHWA) (Barry and Regan, 1978). The FHWA has updated its procedure in a new Traffic Noise Model (Lau et al., 2004). The newer procedure incorporates newer (quieter) reference noise levels for different vehicle types, and uses more detailed procedures to compute noise reduction with distance to intervening barriers. For this EIR, the older procedure was used to allow a more direct comparison with roadway noise levels tabulated in the City's Noise Element (City of Merced, 1997a, 10-32 through 10-38) and because the older procedure is slightly more conservative (higher). For

sources other than roadways (i.e., Merced Municipal Airport and Union Pacific Railroad [UPRR] operations), noise levels were obtained from the City Noise Element. Estimated noise levels were then compared with applicable standards from the City of Merced Noise Element to determine the significance of project-related effects. The following paragraphs present definitions and background information regarding the discussion of noise levels.

(1) Decibel (dB)

Noise levels are described using a decibel scale. The decibel scale is relative to the human ear, with 0 decibels being the threshold for hearing. Because the human ear's perception of sound varies with the frequency, a modified decibel scale (A scale) has been developed that reflects the frequency sensitivity of humans (abbreviated as dBA). Heavy traffic at 300 feet causes a noise level of about 60 dBA, and a jet flyover at 1,000 feet results in about 105 dBA. A doubling of acoustic energy (such as doubling traffic volume along a roadway) will result in an increase of about 3 dBA, which is the smallest increase most people can detect in everyday situations. Each 10 dBA increase is perceived by the human ear as a doubling of the noise level.

(2) Equivalent Noise Level (Leq)

Common noise levels change over time. An equivalent noise level (Leq) is a computed single value that represents the same acoustic energy as a fluctuating noise during a specified time period. Leq values are most often specified for a one-hour period, but shorter or longer time intervals may be indicated. Hourly Leq values are used to compute the longer 24-hour average noise levels described hereafter.

(3) Day-Night Average Sound Levels (Ldn)

Day-night average sound level (Ldn) incorporates Leq values from throughout the day. The 24-hour day is divided into two time periods: Day (7:00 a.m. to 10:00 p.m.) and Night (10:00 p.m. to 7:00 a.m.). Noises occurring at night are weighted or penalized by adding 10 dBA to account for the annoyance of nighttime noise compared to the same noise occurring during the day. An Ldn is the average of the hourly equivalent noise levels throughout the day, using the weighting described.

(4) Community Noise Equivalent Level (CNEL)

Community noise equivalent level, or CNEL, is similar to Ldn except 5 dBA is added to noise occurring between the hours of 6:00 p.m. and 10:00 p.m.

(5) Noise Contours for Roadways and Railroads

Noise contours for roadways and railroads can be modeled to predict the noise level based on predicted traffic volumes and reference noise levels. Contours are presented as lines on a map representing points of equal noise levels around roadways or other sources. Contours are also frequently described by giving their distance from the centerline of the roadway. This allows a convenient way to describe areas of potential impact. In the *Merced Vision 2015 General Plan*

(City of Merced, 1997a), Table 10.6 lists the noise contour data for local streets, as of 1990, and Table 10.1 lists similar data for railroad lines.

e. Existing Physical Conditions in the Study Area

Existing land uses in the study area include a mixture of residential, agricultural, and some older industrial uses. Land uses, which are usually considered sensitive from a noise viewpoint, include residences, schools, hospitals, and similar uses that would be adversely affected by excessive noise. Alicia Reyes Elementary School is within the South Merced Specific Plan area (at 123 South N Street, south of Childs Avenue). Other noise sensitive uses in the vicinity include Mercy Medical Center Merced, at 301 East 13th, and the County medical center in the same area north of the Specific Plan area. No other noise-sensitive land uses are listed in or around the Specific Plan area in the City Noise Element (City of Merced 1997a, 10-18).

Existing noise levels in the Specific Plan area originate primarily from vehicle traffic on SR 59 and SR 99 and from local traffic.

The UPRR (formerly the Southern Pacific Transportation Company) main line runs along the eastern boundary of the Specific Plan area. Noise levels from the train operations affect adjacent properties, most of which are vacant or support industrial uses.

Merced Municipal Airport (Macready Field) is approximately 1,000 feet to the west of the western project boundary. The normal traffic pattern for this airport lies to the southwest, and departures generally occur toward the northwest, away from the Specific Plan area. The far southwestern corner of the Specific Plan area is affected by airport noise.

f. Project Design Elements that Avoid Noise Impacts

The distribution of land uses proposed within the Specific Plan places commercial and industrial uses in those areas that would be most affected by roadway noise. These include the corridors adjacent to SR 99 and the UPRR tracks and adjacent to SR 59. Agricultural, industrial, and business park uses also are designated in the southwestern corner of the Specific Plan area where noise from airport operations may be an issue. The remaining areas where existing or future residential uses may be located next to significant roadway noise sources will require mitigation measures consistent with the policies in the General Plan, as described in this section. Examples of design elements that can be used to reduce noise impacts as part of these mitigation measures are provided in the Noise Element of the General Plan (City of Merced, 1997a, Figure 10.2).

g. Adopted Policies and Regulations that Avoid Noise Impacts

(1) The Noise Element from the Merced Vision 2015 General Plan

The Noise Element identifies the following goals, and associated policies, to achieve a quiet environment and to have sensitive land uses protected from excessive noise (City of Merced 1997a, 10-8):

- Minimize the impacts of aircraft noise (Policy N-1.1)

- Reduce surface vehicle noise (Policy N-1.2)
- Reduce equipment noise levels (Policy N-1.3)
- Reduce noise levels at the receiver where noise reduction at the source is not possible. (Policy N-1.4)
- Coordinate planning efforts so that noise-sensitive land uses are not located near major noise sources (Policy N-1.5)
- Mitigate all significant noise impacts as a condition of project approval for sensitive land uses (Policy N-1.6)

For the evaluation of noise and its compatibility with various land uses, noise levels are usually expressed as "A" weighted decibels (dBA). This and other terms are described in more detail hereafter, and the Noise Element provides additional detail regarding these noise descriptors (City of Merced 1997a, 10-2).

The Merced Noise Element (Policy N-1.4.a) requires new residential projects to meet acceptable noise level standards as follows (City of Merced, 1997a, 10-19):

- A maximum Ldn of 45 dBA for interior residential noise levels;
- A maximum Ldn of 60 dBA for exterior noise levels, especially when outdoor activities are important components of a project; and
- A maximum Ldn of 65 dBA when all best available noise-reduction techniques cannot achieve a 60 dBA level.

Non-residential uses are to meet the noise levels as established in the Noise Compatibility Guidelines (Figure 10.6) of the Noise Element. For most commercial and office uses, the normally acceptable Ldn is limited to 65 dBA or less, and the conditionally acceptable Ldn is 77 dBA.

These policies are intended to reduce incompatibility between noise levels and residential uses. Applied by the City Development Services Department during review of planning and development projects, these policies provide the basis for project conditions that can be implemented to avoid impacts.

(2) The City of Merced Municipal Code

This Code does not have any provisions related to allowable noise levels in specific zones or that provide specific limits on noise from construction or other activities. Section 10.45.010 (H) includes "…loud or excessive noise" within the general definition of nuisance, but this provision does not relate to land-use planning. The City of Merced Building Official does have the authority to limit operating hours for noisy construction activities, consistent with General Plan Noise Policy 1.3.a.

2. CONSIDERATION AND DISCUSSION OF SIGNIFICANT ENVIRONMENTAL IMPACTS

The following information is provided in accordance with Section 15126.2 of the CEQA Guidelines.

a. Environmental Considerations Suggested in CEQA

Appendix G of the CEQA Guidelines suggests that a development project could have a significant impact related to noise if the project would result in any of the following situations:

i Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

ii Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

iii A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

iv A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

v For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

b. Rationale for Establishing Local Thresholds

The compatibility standards identified in the Noise Element are derived from guidelines recommended by the State of California and the federal Department of Housing and Urban Development, which are reviewed in the Noise Element of the *Merced Vision 2015 General Plan* (City of Merced, 1997a, 10-17 through 10-20).

c. Thresholds of Significance Adopted in this EIR

The noise standards from the Merced Noise Element (City of Merced, 1997a, 10-19) are used in this EIR to judge the significance of noise levels and the project effects. For evaluating potential impacts, the relevant standards specify:

- A maximum Ldn of 60 dB for exterior noise levels, especially when outdoor activities are important components of a project;
- A maximum Ldn of 65 dB when all best available noise-reduction techniques cannot achieve a 60 dB level;

- A normally acceptable Ldn of 65 dBA for most commercial and office uses; and
- A conditionally acceptable Ldn of 77 dBA for most commercial and office uses.

d. Regulatory Setting

(1) The State of California Code of Regulations, Public Utilities Code, and Health and Safety Code

The state has established specific limits for indoor noise levels that apply to all multifamily residential units (24 CCR T25-28). These regulations require that an acoustical engineering report be prepared for all multifamily residential projects located in areas where exterior CNEL values exceed 60 dBA. The Noise Element land-use compatibility standards discussed, and policies to achieve those standards, will provide compliance with this state residential building standard. Other provisions in state regulations serve to reduce adverse noise effects from specific sources or in specific situations. These are summarized in Table IVF-1.

TABLE IVF-1

Summary of California Noise Laws and Regulations

Code Citation	Provisions
Title 21 (Public Works) CCR 5000, et seq.	(Aviation Noise Standards) Establishes basic requirement that CNEL not exceed 65 dBA in exterior areas of residences, schools, hospitals, churches, and synagogues. Standards and procedures for defining noise impact areas, monitoring, and resolving complaints.
Public Utilities Code Section 21670, et seq.	Establishes and defines planning and review procedures for Airport Land Use Commissions.
Health and Safety Code Sections 17922.6, and 46000, et seq.	Establishes Office of Noise Control and guidelines for preparation of Noise Elements and adoption of local standards and ordinances.
Title 18 (Industrial Relations) CCR 5095	Establishes standards and procedures for occupational exposures to noise.
Title 13 (Motor Vehicles) CCR 602 and 1036	Establishes standards and procedures for motor vehicle exhaust noise. (Maximum of 95 dBA at 20 inches for most passenger vehicles and light trucks).

(2) Add language regarding the safety and noise evaluation required under 21096 (CEQA Guidelines 15154)

(a) When a lead agency prepares an EIR for a project within the boundaries of a comprehensive airport land use plan or, if a comprehensive airport land use plan has not been adopted for a project within two nautical miles of a public airport or public use airport, the agency shall utilize the Airport Land Use Planning Handbook published by Caltrans' Division of Aeronautics to assist in the preparation of the EIR relative to potential airport-related safety hazards and noise problems.

(b) A lead agency shall not adopt a negative declaration or mitigated negative declaration for a project described in subdivision (a) unless the lead agency considers whether the project will result in a safety hazard or noise problem for persons using the airport or for persons residing or working in the project area.

e. Significant Direct Impacts

(1) Impact NOI-1

Construction of future development projects within the South Merced Specific Plan will expose adjacent neighbors to high construction noise. This is considered a temporary effect, and is *not considered to represent a significant impact.*

The issue of construction noise is most important relative to the existing residential neighborhoods in the Specific Plan area. As new neighborhoods, parks, public facilities, and other uses are developed adjacent to these existing residences, the potential for construction noise impacts will occur.

Most construction equipment generates noise levels from 75 to 95 dBA at a distance of 50 feet (FHWA, 2006, Appendix A). While the equipment noise is not necessarily continuous, large grading and development projects can result in temporary noise levels above limits specified in the City Noise Element. The noise from construction, however, is not permanent and is usually limited to daytime hours during working days. In accordance with Penal Code 46074 and General Plan Noise Policy 1.3a, the City of Merced Building Official has the authority to limit operating hours for noisy construction activities. Limitations are established by the Chief Building Official based on the particular circumstances of each construction site, and typically involve restricted operating hours. For this reason, typical construction noise is not considered to represent a significant impact.

(2) Impact NOI-2

Some existing residential uses are located adjacent to major roadways that are likely to generate noise levels exceeding the City of Merced standard of 65 dBA. When involving roadways that cannot be widened as part of the proposed development, mainly due to right-of-way constraints, these future noise impacts to existing residences are considered *significant and not mitigable*.

Appendix D contains the traffic information and assumptions used to compute future noise levels in areas adjacent to the roadways crossing the Specific Plan area and providing access to and from the north. The estimates of future noise levels were based on the cumulative traffic volumes for the preferred Specific Plan configuration, as presented in the Transportation/Traffic section of this EIR. Table IVF-2 summarizes the results.

Based on a review of the results in Table IVF-2 and the existing land uses in the area, the locations where this impact is anticipated are summarized as follows:

- Existing residences adjacent to Childs Avenue between Martin Luther King Jr. Way (SR 59) and B Street; and

- Existing residences along West Avenue just north of Childs Avenue, which will provide access to the Specific Plan Area.

Although these roadways are expected to carry traffic volumes that will cause noise levels in excess of 65 dBA, only the eastern segment of Childs Avenue will be widened as part of the project. The remaining road segments cannot be widened due to the existing land uses and right-of way constraints, as noted in mitigation measures TR-3 and TR-8 in Section IV.G Traffic. Without widening of the roadways and acquisition of additional right-of-way, the construction of a noise wall or barrier is not feasible.

(3) Impact NOI-3

Some proposed residential uses within the Specific Plan Area are along roadways that will generate noise levels above the City of Merced 65 dBA standard. This is a *potentially significant impact that can be mitigated* through the incorporation of noise reduction measures in the design of individual projects.

Appendix D contains the traffic information and assumptions used to compute future noise levels in areas adjacent to the roadways crossing the Specific Plan area and providing access to and from the north. The estimates of future noise levels were based on the cumulative traffic volumes for the preferred Specific Plan configuration, as presented in the Transportation/Traffic section of this EIR. Table IVF-2 summarizes the results.

Based on a review of the results in Table IVF-2, and comparison with the land uses proposed in the preferred Specific Plan, the most important areas for consideration of noise impacts are where arterial streets are adjacent to proposed residential uses and a few instances where heavily traveled collector streets are adjacent to residential uses. These areas are summarized as follows:

- Designated low-density residential areas within the Specific Plan along Tyler Road; and

- Designated low to medium density residential areas within the Specific Plan adjacent to East Mission Avenue.

Construction of roadway improvements, and the design of new subdivisions, in these areas can incorporate appropriate noise mitigation measures described below.

(4) Impact NOI-4

The Noise Element estimates that the existing and future 65 dBA Ldn contours extend about 335 feet from the railroad tracks that traverse the eastern edge of the planning area. There are no residential uses planned for this area and thus, no associated impact to residential uses in this area of the plan.

TABLE IVF-2

Future Traffic Volumes and Noise Levels

Roadway	Segment	ADT	Ldn at 50 feet (dBA)	Ldn at 100 feet (dBA)	Distance to Ldn 70 (feet)	Distance to Ldn 65 (feet)	Distance to Ldn 60 (feet)	Distance to Ldn 55 (feet)
SR 99	Childs Ave. to Mission Ave.	69,100	82.9	79.9	364.4	785.1	1691.5	3644.3
E 15th Street	D St. to B St.	20,600	70.6	67.6	55.1	118.6	255.6	550.6
	B St. to Brantley St.	12,600	68.5	65.5	39.7	85.5	184.2	396.7
E 13th Street	S.R. 59 to G St.	18,800	68.0	65.0	36.7	79.1	170.5	367.4
	G St. to B St.	10,300	65.4	62.4	24.6	53.0	114.2	246.0
Childs Avenue	West Ave. to M St.	10,400	65.4	62.4	24.8	53.3	114.9	247.6
	M St. to S.R. 59	12,800	66.3	63.3	28.4	61.3	132.0	284.3
	S.R. 59 to G St.	17,200	69.8	66.8	48.8	105.2	226.6	488.2
	G St. to B St.	14,500	69.1	66.1	43.6	93.9	202.2	435.7
	Tyler Rd. to Brantley St.	16,200	69.6	66.6	46.9	101.1	217.7	469.1
	Brantley St. to sb S.R. 99	35,900	73.0	70.0	79.7	171.8	370.1	797.4
Cone Avenue	S.R. 59 to G St.	300	50.0	47.0	2.3	5.0	10.8	23.3
	G St. to Tyler Rd.	1,500	57.0	54.0	6.8	14.7	31.6	68.1
	Tyler Rd. to Brantley St.	7,000	65.9	62.9	26.8	57.8	124.4	268.1
	Brantley St. to Henry St.	8,600	66.8	63.8	30.8	66.3	142.8	307.6
Gerard Avenue	West Ave. to M St.	2,800	59.7	56.7	10.3	22.2	47.9	103.2
	M St. to S.R. 59	2,600	59.4	56.4	9.8	21.2	45.6	98.2
	S.R. 59 to G St.	1,900	58.0	55.0	8.0	17.2	37.0	79.7
	G St. to Tyler Rd.	1,700	57.6	54.5	7.4	15.9	34.4	74.0
	Tyler Rd. to Brantley St.	3,300	60.4	57.4	11.5	24.8	53.5	115.2
	Brantley St. to Henry St.	2,700	59.6	56.6	10.1	21.7	46.8	100.8
New EW Collector	West of S.R. 59	2,000	58.3	55.3	8.2	17.8	38.3	82.5
	G St. to Tyler Rd.	2,100	58.5	55.5	8.5	18.4	39.6	85.2
	Tyler Rd. to Brantley St.	5,100	62.3	59.3	15.4	33.2	71.5	154.0
	Brantley St. to Henry St.	1,700	57.6	54.5	7.4	15.9	34.4	74.0
	Henry St. to NS Collector	4,800	62.1	59.1	14.8	31.9	68.6	147.9

TABLE IVF-2 (Continued)

Future Traffic Volumes and Noise Levels

Roadway	Segment	ADT	Ldn at 50 feet (dBA)	Ldn at 100 feet (dBA)	Distance to Ldn 70 (feet)	Distance to Ldn 65 (feet)	Distance to Ldn 60 (feet)	Distance to Ldn 55 (feet)
Dickenson Ferry Road	West Ave. to S.. 59	10,000	67.5	64.5	34.0	73.3	157.9	340.1
Mission Avenue	S.R. 59 to Tyler St.	9,500	67.3	64.3	32.9	70.8	152.5	328.7
	Tyler Rd. to Brantley St.	11,200	68.0	65.0	36.7	79.0	170.2	366.8
	Brantley St. to Henry St.	13,800	68.9	65.9	42.2	90.8	195.7	421.5
	Henry St. to NS Collector	28,300	72.0	69.0	68.0	146.6	315.8	680.4
	NS Collector to S.R. 99 ramps	35,900	73.0	70.0	79.7	171.8	370.1	797.4
	Across S.R. 99	39,600	73.5	70.5	85.1	183.4	395.1	851.3
	East of S.R. 99	44,000	73.9	70.9	91.3	196.7	423.9	913.2
West Avenue	North of Childs Ave.	11,500	65.9	62.8	26.5	57.0	122.9	264.7
	Childs Ave. to Dickinson Ferry Rd.	1,700	57.6	54.5	7.4	15.9	34.4	74.0
M Street	North of Childs Ave.	8,200	64.4	61.4	21.1	45.5	98.1	211.3
	Childs Ave. to Gerard Ave.	5,100	62.3	59.3	15.4	33.2	71.5	154.0
	Gerard Ave. to Dickinson Ferry Rd.	2,200	58.7	55.7	8.8	18.9	40.8	87.9
SR 59	S.R. 99 to 13th St.	30,000	70.7	67.7	55.6	119.8	258.1	556.0
	13th St. to Childs Ave.	30,100	72.9	69.9	78.6	169.3	364.7	785.7
	Childs Ave. to Gerard Ave.	27,100	72.5	69.5	73.3	157.8	340.0	732.6
	Gerard Ave. to Mission Ave.	24,200	72.0	69.0	67.9	146.4	315.3	679.4
	Mission Ave. to Vassar St.	19,500	71.1	68.0	58.8	126.7	273.1	588.3
G Street	16th St. to 15th St.	31,700	70.3	67.3	52.0	112.1	241.6	520.5
	15th St. to S.R. 99	20,400	68.3	65.3	38.8	83.6	180.1	387.9
	S.R. 99 to 13th St.	21,800	68.6	65.6	40.5	87.4	188.2	405.5
	13th St. to Childs Ave.	14,100	66.7	63.7	30.3	65.3	140.8	303.3
	Childs Ave. to Gerard Ave.	6,000	63.0	60.0	17.2	37.0	79.6	171.6
	Gerard Ave. to Mission Ave.	1,700	57.6	54.5	7.4	15.9	34.4	74.0
D Street	16th St. to 15th St.	15,900	67.3	64.3	32.9	70.8	152.5	328.6

TABLE IVF-2 (Continued)

Future Traffic Volumes and Noise Levels

Roadway	Segment	ADT	Ldn at 50 feet (dBA)	Ldn at 100 feet (dBA)	Distance to Ldn 70 (feet)	Distance to Ldn 65 (feet)	Distance to Ldn 60 (feet)	Distance to Ldn 55 (feet)
B Street	15th St. to 13th St.	7,900	64.2	61.2	20.6	44.4	95.7	206.1
	13th St. to Childs Ave.	14,600	66.9	63.9	31.0	66.9	144.1	310.4
Tyler Road	Childs Ave. to Gerard Ave.	15,400	69.4	66.4	45.4	97.7	210.5	453.5
	Gerard Ave. to Mission Ave.	12,400	68.4	65.4	39.3	84.6	182.2	392.5
	Mission Ave. to Vassar St.	5,000	64.5	61.5	21.4	46.2	99.4	214.2
De Long	15th St. to Childs Ave.	5,200	62.4	59.4	15.6	33.6	72.4	156.0
	Childs Ave. to Gerard Ave.	4,500	61.8	58.8	14.2	30.5	65.7	141.6
	Gerard Ave. to Mission Ave.	1,300	56.4	53.4	6.2	13.3	28.7	61.9
Brantley Street	15th St. to Childs Ave.	9,200	67.1	64.1	32.2	69.3	149.3	321.7
	Childs Ave. to Cone Ave.	18,600	70.2	67.2	51.4	110.8	238.7	514.4
	Cone Ave. to Gerard Ave.	4,700	62.0	59.0	14.6	31.4	67.7	145.8
	Gerard Ave. to Mission Ave.	4,600	61.9	58.9	14.4	31.0	66.7	143.7
NS Collector	Cone Ave. to Gerard Ave.	1,900	58.0	55.0	8.0	17.2	37.0	79.7
	Gerard Ave. to Mission Ave.	1,500	57.0	54.0	6.8	14.7	31.6	68.1
Henry Street	Gerard Ave. to Mission Ave.	15,300	69.3	66.3	45.2	97.3	209.6	451.6
	Mission Ave. to Vassar St.	7,300	66.1	63.1	27.6	59.4	128.0	275.7
NS Collector	North of Mission Ave.	7,800	64.2	61.2	20.4	44.0	94.9	204.4

ADT = average daily traffic

All of the area within this portion of the Specific Plan will be designated for commercial, business park, or industrial uses. Noise thresholds for commercial, business park and industrial are found in Figure 10.6 of the *Merced Vision 2015 General Plan*. Conditionally acceptable noise levels for business and industrial uses extend up to 77 and 80 dBA Ldn, respectively. These noise levels would occur approximately 21 and 11 feet, respectively, from the railroad tracks. The provision of standard setbacks and parking areas should provide adequate buffering distances for new commercial and industrial development proposed in this part of the Specific Plan.

Thus, *railroad noise does not represent a significant impact.*

(5) Impact NOI-5

The General Plan Noise Element indicates that the future (2010) 60 dBA CNEL contour from Merced Municipal Airport will not extend into the Specific Plan area, and the 55 dBA CNEL contour will extend approximately 200 feet into the far southwestern corner of the area. This portion of the Specific Plan area is within the Runway Protection Zone for the airport, and the Specific Plan designates this area for agricultural uses compatible with this airport-related zone. The nearest designated residential uses in the Specific Plan will be approximately 1,000 feet outside of the 60 dBA CNEL contour. For this reason, *airport noise does not represent a significant impact.*

f. Significant Cumulative Impacts

The estimates of noise levels provided in this section are based on cumulative traffic volumes, including buildout of the preferred Specific Plan, buildout of other areas according to the City General Plan, and Caltrans projections of future volumes on the state highways. Railroad operations have remained relatively constant on the UPRR; therefore, railroad noise levels estimated in the Noise Element are expected to remain accurate into the future. Modern locomotives are somewhat quieter than older models, and track maintenance and technology improvements reduce noise levels. These improvements are relatively minor and are generally not noticeable, given the variation in freight train operations and noise levels. Projections of the airport noise contours are consistent with those in the *Merced County Airport Land Use Compatibility Plan* (Merced County, 1999, Exhibit 7-E). For these reasons, the discussions presented above for direct and indirect impacts incorporate regional projections of cumulative development, and no additional analysis of cumulative noise effects is necessary.

3. MITIGATION MEASURES ADOPTED TO MINIMIZE SIGNIFICANT EFFECTS

The following information is provided in accordance with Section 15126.4 of the CEQA Guidelines.

a. Measures that Mitigate Direct Impacts

No special mitigation is required to reduce construction noise effects.

(1) Mitigation NOI-1

For residential or other sensitive land uses proximate to the arterials and major collector roads which will exceed City noise thresholds per Table IVF-2), noise mitigation may include a combination of building setbacks; the construction of noise barriers that may include a berm, wall, or combination of the two; and the siting of buildings to block traffic noise, to provide suitable outdoor living areas with Ldn values no higher than 65 dBA. Concurrent with submittal of an annexation or a tentative subdivision map for land already within the City, the applicant shall provide a project development plan based in part on a sound study that includes noise attenuation features, such as noise barriers, increased setbacks, building layout, floor-plan and architectural design, or a combination thereof. The sound study, prepared by an acoustical engineer, shall specify the features necessary to meet the City's adopted noise level standards (Noise Implementation Action N-1.4.a), and shall be submitted together with the proposed development plan.

b. Measures that Mitigate Cumulative Impacts

For certain existing residential uses adjacent to Childs Avenue and roads that will be providing access to the Specific Plan area, it is not feasible to widen the roadways and include new noise mitigation walls or barriers. In these areas, cumulative noise impacts resulting from future traffic volumes will be significant and unavoidable.

The measures described are suitable for avoiding cumulative noise impacts for proposed residential uses within the Specific Plan.

G. TRANSPORTATION/TRAFFIC

This section describes how development associated with the South Merced Specific Plan will affect transportation and traffic. Where significant effects are identified, mitigation measures are provided to reduce those impacts to the extent feasible.

1. ENVIRONMENTAL SETTING

The following information is provided in accordance with Section 15125 of the CEQA Guidelines. This environmental setting is the baseline for determining whether the Specific Plan impacts are significant.

a. Study Area for Direct Impacts

The intersections and roadway segments listed in Table IVG-1 and Table IVG-2, respectively, constitute the study area for direct impacts. State routes, City of Merced streets, and Merced County roads will be used to access the plan area. The South Merced Specific Plan study area comprises 2,052 acres and is bounded on the north by Childs Avenue, by SR 99 on the east, by Mission Avenue/Dickenson Ferry Road on the south, and by West Avenue and the Merced Airport on the west.

b. Surrounding Area

The City of Merced is located on essentially flat terrain in eastern Merced County, within the Central Valley of California, approximately 100 miles southeast of San Francisco and 31 miles northwest of Los Angeles. The city is located on SR 99 and also is served by SR 50 and SR 140. The South Merced Specific Plan area is situated south of SR 99, with SR 59 bisecting the western portion of the planning area.

c. Study Area for Cumulative Impacts

The intersections will be evaluated for short-term and long-term cumulative traffic impacts using the projected traffic forecasts from the Merced County Association of Governments' (MCAG) regional traffic model, which is used to develop the Merced County 2004 Regional Transportation Plan (RTP). The RTP identifies the actions that should be taken and the funding needs and options available for successful implementation. Short-term cumulative impacts are based on projected cumulative traffic in the year 2015, including UC Merced traffic, and long-term cumulative impacts based on projected cumulative traffic in the year 2030.

d. Methods

Because it will take many years to fully implement the South Merced Specific Plan, the impacts of implementation have been identified based on long-term daily traffic volume forecasts developed for the study area using the MCAG regional travel demand forecasting model. For this analysis, MCAG's year 2030 model was adjusted to account for other planned development east of SR 99 and to account for the specific land uses and circulation system components planned in the Specific Plan.

TABLE IVG-1

Existing Intersection Levels of Service

Location	Control	AM Peak Hour		PM Peak Hour	
		Average Delay (seconds)	Level of Service	Average Delay (seconds)	Level of Service
1. SR 59 / NB SR 99 ramps					
(overall)	WB Stop	(3.5 sec)	(A)	(2.8 sec)	(A)
NB left turn		8.9 sec	A	10.3 sec	B
WB left+right turn		27.7 sec	D	21.8 sec	C
2. SR 59 / SB SR 99 ramps	EB Stop				
(overall)		(6.1 sec)	(A)	(5.7 sec)	(A)
SB left turn		8.9 sec	A	9.3 sec	A
EB left+right turn		21.9 sec	C	25.7 sec	C
3. SR 59 / Childs Avenue	EB and WB Stop				
(overall)		(71.9 sec)	(F)	(>100 sec)	(F)
NB left turn		8.7 sec	A	8.9 sec	A
SB left turn		8.6 sec	A	9.0 sec	A
EB approach		>100 sec	F	>100 sec	F
WB approach		>100 sec	F	>100 sec	F
4. Childs Avenue / G Street	All Way Stop				
(overall)		(10.2 sec)	(B)	(12.5 sec)	(B)
NB approach		10.2 sec	B	11.2 sec	B
SB approach		9.5 sec	A	12.8 sec	B
EB left turn		10.8 sec	B	13.7sec	B
WB left turn		10.1 sec	B	11.1 sec	B
6. SR 59 / Gerard Avenue	EB and WB Stop				
(overall)		(3.4 sec)	(A)	(2.8) sec	(A)
NB left turn		–	–	8.1 sec	A
SB left turn		8.5 sec	A	9.0 sec	A
EB approach		24.4 sec	C	25.8 sec	D
WB approach		19.8 sec	C	18.8 sec	C
7. Childs Avenue / SR 99 SB Ramp	SB Stop				
(overall)		(6.8 sec)	(A)	(26.1 sec)	C
SB left turn		29.0 sec	D	65.3 sec	F
WB left turn lane		8.1 sec	A	8.2 sec	A
8. Childs Avenue / SR 99 NB Ramp	All-Way Stop	23.0 sec	C	31.8 sec	D

EB = eastbound
NB = northbound
SB = southbound
WB = westbound

TABLE IVG-2

Existing Roadway Segment Levels of Service

Road	Location	Classification	Volume	Level of Service
SR 59	Just north of Childs Avenue	Arterial - 4 lane	11,800	A
	Immediately S. of SR 99	Arterial - 4 lane	14,300	A
	Childs Avenue to Gerard Avenue	Arterial - 2 lane	8,600	A
	Gerard Avenue to Mission Avenue	Arterial - 2 lane	8,600	A
Childs Avenue	SR 59 to G Street	Rural - 2 lane	4,000	C
	G Street to Tyler Road	Rural - 2 lane	4,200	C
	Tyler to SH 99	Rural – 2 lane	6,200	C
	West of SH 59	Arterial – 2 lane	5,200	A
Tyler Road	Childs Avenue to Mission Avenue	Rural - 2 lane	**2,800**	C

e. Existing Physical Conditions in the Study Area

(1) Existing Street and Highway System

State highways, City of Merced streets, and Merced County roads will be used to access the plan area.

(a) State Route 59

SR 59 is a north-south highway through Merced County. It is a two-lane-lane highway in the study area. Beyond the northern portion of the study area, SR 59 becomes Martin Luther King Jr. Way (MLK) as it enters central Merced. Access to SR 59 from the project will occur primarily at unsignalized intersections with Childs Avenue and Gerard Avenue. The most recent traffic counts available from Caltrans (2005) indicate that SR 59 carries an average daily traffic (ADT) volume of 14,300 immediately south of SR 99, 11,800 north of Childs Avenue, and 8,600 between Mission Avenue and Childs Avenue.

(b) Gerard Avenue

Gerard Avenue is an east-west roadway that runs from a point west of SR 99 to its terminus west of SR 59. In the study area, Gerard Avenue is a rural two-lane road. The current ADT on Gerard Avenue is estimated at 2,100.

(c) Childs Avenue

Childs Avenue is a two-lane collector road that extends westerly from an interchange on SR 99 to West Avenue. This road provides access to SR 99 at a full access interchange east of the study area. Childs Avenue carries approximately 5,200 vehicles per day west of SR 59 and 4,600 vehicles per day in the area east of SR 59 to Tyler Road. Childs Avenue carries approximately 6,200 vehicles per day at its highest volume location from Tyler Road to SR 99.

(d) G Street

G Street is a north-south collector road that extends from central Merced southerly to Cone Avenue and south through the recently approved La Bella Vista subdivision. The existing ADT on G Street between Childs Avenue and Cone Avenue is 3,600.

(e) Tyler Road

Tyler Road is a north-south collector road that extends south from an intersection on Childs Avenue to Reilly Road in rural Merced County. The existing daily traffic volume on Tyler Road is approximately 2,800 ADT.

(2) Current and "Existing Plus Approved" Levels of Service

Previous traffic studies identified peak hour levels of service (LOSs) at existing intersections in the study area. As noted in Table IVG-1, these intersections, other than Childs Avenue and SR 59, operate at LOS D or better during the a.m. and p.m. peak hours.

It should be noted that the configuration of the SR 59/SR 99 interchange, and its proximity to the SR 59/13th Avenue intersection, makes calculation of ramp intersection LOS problematic. Because 13th Avenue is very close to the southbound off ramps, the queue of southbound traffic approaching 13th Avenue regularly extends beyond the off ramp. However, the intersection is marked "Keep Clear," and off ramp traffic is often able to turn left onto northbound SR 59 through the queue. Calculation of average delays under these conditions is not feasible, and the LOS reported in this report represents conditions for isolated intersections.

The *Mission Avenue Annexation* traffic study also identified peak hour levels of service (LOSs) assuming approved development project ADT at existing intersections in the study area. That study found that several intersections would operate below acceptable LOS, including: "G" Street and Childs; Childs and SR 59; SR 59 and Gerard Avenue; and SR 59 and Mission Avenue. The applicants of the projects within the Mission Avenue Annexation are working toward implementation of mitigation measures to lessen those impacts.

Caltrans District 10 has programmed use of "safety" money for the installation of a signal at the off-set intersection of Childs Avenue and SR 59. Caltrans views the signalization of the offset intersection as an interim safety project and encourages the City to obtain the right-of-way for an ultimate lined up configuration. The detailed preliminary design work for the Safety project is due to be completed in Fall 2007, with the installation likely in 2008.

(3) Traffic Signal Warrants

Unsignalized intersections were analyzed to determine whether or not they meet Peak Hour Signal Warrants according to the *Manual of Uniform Traffic Control Devices* (see *MUTCD 2003 California Supplement*, Section 4C.04 Warrant 3, Peak Hour) (Caltrans, 2004).

The SR 59/Childs Avenue intersection meets the Peak Hour Signal Warrant under existing conditions during both the a.m. and p.m. peak hour.

(4) Roadway Segment Levels of Service

LOS have been calculated based on daily and weekday peak-hour traffic volumes on individual segments of study area roads. These volumes and the applicable LOS are presented in Table IVG-2. As shown, all segments operate at acceptable LOS under existing conditions.

(5) Roadway Segment Characteristics

Tables 2A-2D describe the use and basic cross-section information for roadways north of Childs Avenue that will be impacted by traffic. This information is provided to form a baseline comparison of street characteristics to planned or needed improvements. Some of these roadways are planned to contain an "Urban Collector" (C3) thereby increasing its capacity and level of service potential.

TABLE IVG-2A

Existing Road Segment Characteristics

#	Road Segment Characteristics	On Street Parking	Travel Lanes	Curb-to-Curb	ROW
G Street (between Childs Avenue and 16th Street)					
1	*Childs – 11th*: Parking lots and vacant lands on either side. Good potential for road widening.	Y	2	43	68
2	*11th – 13th*:Residential street side yards abut street. Alley access to "G" Street.	Y	2	46	85
3	*13th – 15th*: Underpass of SH 99 and commercial uses on both side of street.	N	4	60	77
4	*15th – 16th*: Railroad crossing and commercial uses on both sides of street.	N	4	60	80

TABLE IVG-2B

#	Road Segment Characteristics	On Street Parking	Travel Lanes	Curb-to-Curb	ROW
13th Street (between SH 59 and B Street)					
1	*SH59 – "G" Street*: Residential on south side and vacant on north side with some room for widening. Commercial use at NW corner of 13th & "G".	Y	2	35	80
2	*"G" Street – "D" Street*: Primarily hospital-related uses on both sides with a light mixture of residential and vacant lots.	Y	2	43	77
3	*"D" Street to "B" Street*: Medical-related buildings on both sides of street.	y	2	42	80

TABLE IVG-2B (Continued)

#	Road Segment Characteristics	On Street Parking	Travel Lanes	Curb-to-Curb	ROW
15th Street (between SH 59 and B Street)					
1	*SH59 – "G" Street*: Mixture of vacant and commercial lots, mostly "General Commercial" and "Commercial Thoroughfare" type uses. Contains recent improvements; curb-to-curb widens at SH 59 and 15th to 44-feet.	Y	2	40	80
2	*"G" Street – SH99 Overcrossing*: Industrial Uses on both sides	Y	2	37	87
3	*SH99 Overcrossing to "D" Street*: Vacant lots on north, parking lots on south.	Y	2	48	87
4	*"D" Street to "B" Street*: Recent medical-related buildings and parking lots on both sides of street.	Y	2	48	87

TABLE IVG-2C

#	Road Segment Characteristics	On Street Parking	Travel Lanes	Curb-to-Curb	ROW
"D" Street (between 16th Street and 15th Street)					
#	Road Segment Characteristics	On Street Parking	Travel Lanes	Curb-to-Curb	ROW
4	*"D" Street between 16th and 15th Street*: Parking lot and vacant lots on either side.	N	2	40	60

TABLE IVG-2D

#	Road Segment Characteristics	On Street Parking	Travel Lanes	Curb-to-Curb	ROW
"B" Street (between 13th Street and Childs Avenue)					
#	Road Segment Characteristics	On Street Parking	Travel Lanes	Curb-to-Curb	ROW
1	*Childs Avenue – 13th Street: Medical-related buildings on west and cemetery on east. Widening potential on east.*	Y	2	35	80
2	*13th Street – 15th Street*: Same as #1 above.	N	2	23	80

f. Project Design Elements that Avoid Transportation/Traffic Impacts

Traffic analysis was conducted during the preparation of the land use plan for the South Merced Specific Plan. Substantial reductions and relocation of regionally servicing land uses were made to dramatically reduce the vehicular traffic from the project. For example, the current "Regional Commercial" designation (approximately 160-acres in size) that exists at the southwest corner of SR 99 and Childs Avenue is proposed to be reduced in size to 40 acres and relocated to Mission Avenue, where a new interchange is currently under construction.

The Specific Plan also proposes a wide variety of land uses in order to provide services near its population center, thereby reducing the need for extensive travel through the area or to other parts of the City. These uses include: neighborhood parks and a regional park; elementary schools and a high school; "neighborhood" and "regional" commercial uses including offices; and business park and industrial land uses.

The Specific Plan includes the development of a circulation system that is intended to provide the capacity and necessary connections to existing roadways to accommodate future development in the plan area, as well as the requirements of regional traffic growth. Figure IVG-1 illustrates the planned circulation system. One of these features is the "Urban Collector" marked as "C3" on the circulation concept (Figure IVG-1).

This new street classification is designed to accommodate increased amounts of traffic anticipated in certain areas within and adjacent to the plan area. The C3 classification of roadway is characterized by one that has: two travel lanes; provision for left-turn lanes; and no on-street parking. This "Urban Collector" is located primarily along the Industrial and Business Park lands where a higher number of car trips is anticipated, and where a means to accommodate large freight vehicles. It is also used along residential, office and commercial travel corridors that are anticipated to carry greater loads of traffic than regular collector roads that have on-street parking and do not provide for separate left-turn lanes. Even with these roadways, the traffic analysis found that along some road segments, additional "capacity-enhancing" design elements may be necessary such as reducing the number of street intersections that intersect the Urban Collector. In some cases, use of a four-lane arterial will be needed to meet the City's level of service standard for traffic flow. . The following table summarizes the options of different cross-sections that can be utilized by the City of Merced to implement this type of street.

"C3" Types	Features (all include 2 lanes and center turn lane)	Curb to Curb	Right-of-Way
1	Bike Lanes / No On-Street Parking	46'	72'
2	On-Street Parking / No Bike Lanes	50'	61'*
3	On Street Parking and Bike Lanes	58'	84'

* Does not include parkstrips

g. Adopted Policies and Regulations that Avoid Transportation/Traffic Impacts

(1) *Merced Vision 2015 General Plan*

The *Merced Vision 2015 General Plan*, adopted in 1997, contains goals and policies relevant to transportation and circulation around the proposed Specific Plan area. It envisions a one-mile grid system of major north-south roadways as part of the "Village Concept" for growth in the northern and northeastern sectors of the City.

Chapter 6 of the City's General Plan describes the urban design guidelines for development of the road and circulation system for new growth areas. At a citywide scale, this urban design concept defines the relationship between various parts of the City, linked together by open space and transportation corridors. The guidelines provide for how the various street types and parking lots are to be designed.

The City's General Plan sets a minimum peak hour LOS D as a design objective for all new streets in new growth areas and for most existing City streets, except under special circumstances. The City's General Plan also has a policy to ensure that new development provides facilities and programs that improve the effectiveness of transportation control measures and congestion management programs.

2. CONSIDERATION AND DISCUSSION OF SIGNIFICANT ENVIRONMENTAL IMPACTS

a. Environmental Considerations Suggested in CEQA

Appendix G of the CEQA Guidelines suggests that a development project could have a significant impact on transportation/traffic if the project would result in any of the following situations:

i. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

ii. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.

iii. Result in a change in air traffic patterns, including either an increase in traffic levels, or a change in location that results in substantial safety risks.

iv. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

v. Result in inadequate emergency access.

vi. Result in inadequate parking capacity.

vii. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

b. Rationale for Establishing Local Thresholds

(1) Trip Generation

The magnitude of the traffic associated with the Specific Plan can be appreciated based on the number of vehicle trips accompanying operation of the land uses planned in the Specific Plan area. Table IVG-3 identifies the total land-use quantities anticipated in the Specific Plan area with full occupancy, including both existing and future development. As noted, the plan area will include more than 6,100 residences, along with approximately 670 acres of commercial non-residential use. Two schools are also anticipated.

The number of vehicular trips generated by this level of development is also shown in Table IVG-3. As noted, residential uses could generate approximately 37% of the 153,433 total daily trips forecast for the area.

(2) Traffic Volume Forecasts

Year 2030 daily traffic volumes and Levels of Service based on MCAG model capacities have been employed to identify the impacts of implementing the Specific Plan.

Table IVG-4 presents daily traffic volumes on the arterial and collector streets that make up the plan area circulation system and on major streets providing access to the plan area. Resulting LOSs also have been identified. The extent to which implementation of the Specific Plan will result in conditions in excess of the City of Merced's LOS D minimum standard are noted in the following discussion of impacts.

c. Thresholds of Significance Adopted in This EIR

The City of Merced, as the Lead Agency, has adopted the following as thresholds of significance, consistent with CEQA Guidelines, and has determined that impacts related to transportation/traffic will result if the Specific Plan would:

i. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

ii. Exceed, either individually or cumulatively, the level of service standard established by the Merced Vision 2015 General Plan and Merced County General Plan minimum peak hour LOS of "D," MCAG standard of "D" for the regional network.

iii. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Table IVG-3

South Merced Specific Plan Build Out Trip Generation Estimate

				Trip Generation Rates / Forecasts					
				Daily		AM Peak Hour		PM Peak Hour	
Land Use Code	**Description**	**Unit**	**Quantity**	**Rate Per Unit**	**Trips**	**Rate Per Unit**	**Trips**	**Rate Per Unit**	**Trips**
LDR	Low Density Single Family Residential	Residence	3,964	9.57	37,935	0.75	2,973	1.01	4,004
MDR	Medium Density Residential	Residence	797	9.57	7,628	0.75	598	1.01	805
VR	Village/High Density Residential	Residence	1,760	6.63	11,669	0.51	898	0.62	1,091
	Residential Subtotal		**6,109**		**57,232**		**4,469**		**5,900**
BP	Business Park	Acre	116.7	200	23,340	22.4	2,614	20.2	2,357
OFF	Medical/Dental/Professional Offices	Acre	13.4	420	5,628	28.8	386	43.2	579
CN	Neighborhood Commercial	Acre	19.8	520	10,296	10.4	206	52.0	1,030
COM	Service/Highway Commercial	Acre	123.5	150	18,525	3.0	371	15.2	1,877
CR	Regional Commercial	Acre	40.8	360	14,688	7.2	294	36.0	1,469
IND	Industrial Park	Acre	355.5	60	21,330	8.1	2,880	8.4	2,986
SCH	Elementary School	Student	600	1.29	774	0.42	252	0.05	30
SCH	Middle School	Student	1,000	1.62	1,620	0.53	530	0.15	150
	Non-Residential Subtotal				**96,201**		**7,533**		**10,478**
	Total Trip Ends				**153,433**		**12,002**		**16,378**

Source: URS Corporation

iv. Conflict with City development standards requiring development to design roads and other transportation elements to avoid creating hazards and provide adequate emergency access.

d. Regulatory Setting

(1) *Merced Vision 2015 General Plan*

The *Merced Vision 2015 General Plan*, adopted in 1997, contains goals and policies relevant to transportation and circulation around the proposed Specific Plan area. It envisions a one-mile grid system of major north-south roadways as part of the "Village Concept" for growth in the northern and northeastern sectors of the City.

TABLE IVG-4

South Merced Specific Plan Area Daily Traffic

Street	Location	# Lanes	Daily Volume/Level of Service Preferred Volume	V/C	LOS[a]
East-West Streets					
E 15th Street	D Street to B Street	2	20,600	1.37	**F**
	B Street to Brantley Street	2	12,600	0.85	D
E 13th Street	SR 59 to G Street	4	18,800	0.63	B
	G Street to B Street	2	10,300	1.03	**F**
Childs Avenue	West Avenue to M Street	2	10,400	0.69	B
	M Street to SR 59	2	12,800	0.85	D
	SR 59 to G Street	4	17,200	0.57	A
	G Street to B Street	4	14,500	0.49	A
	B Street to Tyler Road	4	—	—	—
	Tyler Road to Brantley Street	4	16,200	0.54	A
	Brantley Street to SB SR 99 Ramps	4	35,900	1.20	**F**
Cone Avenue	SR 59 to G Street	2	300	0.04	A
	G Street to Tyler Road	2	1,500	0.15	A
	Tyler Road to Brantley Street	2	7,000	0.47	A
	Brantley Street to Henry Street	2	8,600	0.58	A
Gerard Avenue	West Avenue to M Street	2	2,800	0.28	A
	M Street to SR 59	2	2,600	0.26	A
	SR 59 to G Street	2	1,900	0.20	A
	G Street to Tyler Road	2	1,700	0.17	A
	Tyler Road to Brantley Street	2	3,300	0.33	A
	Brantley Street to Henry Street	2	2,700	0.28	A
	Henry Street over SR 99	2	—	—	—
New E-W Collector	West of SR 59	2	2,000	0.21	A
	G Street to Tyler Road	2	2,100	0.21	A
	Tyler Road to Brantley Street	2	5,100	0.08	A
	Brantley Street to Henry Street	2	1,700	0.17	A
	Henry Street to NS Collector	2	4,800	0.48	A
Dickenson Ferry Road	West Avenue to SR 59	4	10,000	0.34	A

TABLE IVG-4 (Continued)

South Merced Specific Plan Area Daily Traffic

Street	Location	# Lanes	Daily Volume/Level of Service Preferred Volume	V/C	LOS[a]
East-West Streets (cont'd)					
Mission Avenue	SR 59 to Tyler Road	4	9,500	0.32	A
	Tyler Road to Brantley Street	4	11,200	0.38	A
	Brantley Street to Henry Street	6	13,800	0.31	A
	Henry Street to NS Collector	6	28,300	0.63	**B**
	NS Collector to SR 99 ramps	6	35,900	0.80	C
	Across SR 99	4	39,600	0.88	D
	East of SR 99	4	44,000	1.47	**F**
North South Streets					
West Avenue	North of Childs Avenue	2	11,500	1.15	**F**
	Childs Avenue to Dickenson Ferry Road	2	1,700	0.17	A
M Street	North of Childs Avenue	2	8,200	0.82	D
	Childs Avenue to Gerard Avenue	2	5,100	0.51	A
	Gerard Avenue to Dickenson Ferry Road	2	2,200	0.22	A
SR 59	SR 99 to 13th Street	4	30,000	1.00	**E**
	13th Street to Childs Avenue	4	30,100	1.01	**F**
	Childs Avenue to Gerard Avenue	4	27,100	0.91	**E**
	Gerard Avenue to Mission Avenue	4	24,200	0.81	D
	Mission Avenue to Vassar Street	4	19,500	0.54	A
G Street	16th Street to 15th Street	4	31,700	1.06	**F**
	15th Street to SR 99	4	20,400	0.68	B
	SR 99 to 13th Street	4	21,800	1.09	**F**
	13th Street to Childs Avenue	2	14,100	0.94	**E**
	Childs Avenue to Gerard Avenue	2	6,000	0.60	A
	Gerard Avenue to Mission Avenue	2	1,700	0.17	A
D Street	16th Street to 15th Street	2	15,900	1.60	**F**
B Street	15th Street to 13th Street	2	7,900	0.53	A
	13th Street to Childs Avenue	2	14,600	0.97	**E**
Tyler Road	Childs Avenue to Gerard Avenue	4	15,400	0.52	A
	Gerard Avenue to Mission Avenue	4	12,400	0.41	A
	Mission Avenue to Vassar Street	2	5,000	0.28	A
De Long Street	15th Street to Childs Avenue	2	5,200	0.53	A
	Childs Avenue to Gerard Avenue	2	4,500	0.46	A
	Gerard Avenue to Mission Avenue	2	1,300	0.13	A
Brantley Street	15th Street to Childs Avenue	2	9,200	0.61	B
	Childs Avenue to Cone Avenue	2	18,600	1.24	**F**
	Cone Avenue to Gerard Avenue	2	4,700	0.47	A
	Gerard Avenue to Mission Avenue	2	4,600	0.46	A

TABLE IVG-4 (Continued)

South Merced Specific Plan Area Daily Traffic

Street	Location	# Lanes	Daily Volume/Level of Service Preferred Volume	V/C	LOS[a]
North South Streets (cont'd)					
N-S Collector	Cone Avenue to Gerard Avenue	2	1,900	0.19	A
	Gerard Avenue to Mission Avenue	2	1,500	0.15	A
Henry Street	Parsons Avenue to Gerard Avenue	2	—	—	—
	Gerard Avenue to Mission Avenue	2	15,300	1.02	**F**
	Mission Avenue to Vassar Street	2	7,300	0.41	A
N-S Collector	North of Mission Avenue	2	7,800	0.78	C

Source: URS Corporation

[a] LOS levels E and F, which do not meet City/County standards, are shaded.

V/C = volume/capacity

Chapter 6 of the City's General Plan describes the urban design guidelines for development of the road and circulation system for new growth areas. At a citywide scale, this urban design concept defines the relationship between various parts of the City, linked together by open space and transportation corridors. The guidelines provide for how the various street types and parking lots are to be designed.

The City's General Plan sets a minimum peak hour LOS D as a design objective for all new streets in new growth areas and for most existing City streets, except under special circumstances. The City's General Plan also has a policy to ensure that new development provides facilities and programs that improve the effectiveness of transportation control measures and congestion management programs.

(2) City of Merced Zoning Ordinance

The City of Merced Zoning Ordinance provides standards for the development of streets and parking lots and access to development. These standards avoid hazards and provide adequate parking and emergency access are provided. Projects are reviewed by staff to ensure all requirements of the Zoning Ordinance are adhered to prior to approval of building permits for construction.

(3) Merced County General Plan

The Merced County General Plan Circulation Element, updated in 2000, includes policies to ensure that adequate access is provided and maintained for all County land uses. The acceptable LOS for roadways within rural areas of the County is LOS C or better; within more urban developed areas, and roadways between urban growth areas, the LOS is set at D during peak traffic periods.

(4) 2004 Regional Transportation Plan for Merced County

The 2004 RTP (MCAG, 2004) provides a comprehensive long-range view of transportation issues, needs, and opportunities for Merced County. It establishes the goals, objectives and policies for future transportation improvements. The RTP identifies the actions that should be taken and the funding needs and options available for successful implementation.

The MCAG Governing Board has established an LOS D for the entire regional road network. Any segment of roadway that is worse than LOS D is considered to be a deficiency in the transportation system. These deficiencies may then become the basis for project priorities in the capital improvement program. Caltrans' LOS standard is C on routes within the Interregional Road System, which includes SR 5, SR 99, and SR 140 from Merced to Mariposa County, and SR 152. The LOS standard is D on all other state routes.

The RTP contains a series of transportation improvement projects, some of which could be beneficial. These improvements are divided into two categories: those for which funding has been identified from an established source, such as state or federal funds; and those for which funding would have to be identified before construction could begin. These priorities were based on the policy goal of having no worse than LOS D on any significant roadway.

The 2004 RTP identifies a list of projects necessary to preserve the capacity of the regional road system. The list was based on the RTP Policy goal of having no worse than level of service "D" on any significant roadway. Some of the deficiencies on the regional road network are already being addressed by projects that are under way or under study. These partially or fully programmed projects are listed below:

Project	Limits	Funding Strategy
Campus Parkway phase 1	SR 99 to Yosemite Ave.	Federal + State + RIP
Mission Ave. Freeway	Owens Creek to N. of Mission Ave.	IIP+RIP
North Atwater Freeway	N. of Atwater to Arena Way	IIP
Livingston Stage 2 Freeway	Arena Way to Hammatt IC	IIP
Plainsburg IC and Freeway	Madera County to Athlone	IIP
Arboleda IC and Freeway	Athlone to Mission Freeway	IIP

Some regional deficiencies are expected to be funded by local agencies, development, or other sources such as 100% Interregional Improvement Program. These projects are listed below:

Agency	Project	Strategy
Caltrans	SR 33 - widen to 4 lanes - from SR 152 to I-5	Development or Local
Caltrans	SR 33 - widen bridge over I-5 to 4 lane	Dev/Local
Caltrans	SR 59 - passing lanes and shoulders - SR 152 to Mission Ave.	SHOPP
Caltrans	99/140 interchange	SHOPP
Livingston	Hammatt Ave. - new arterial - Walnut Ave. to Olive Ave.	Dev/Local
Los Banos	Complete Los Banos' circulation loop system (Pioneer, Ward, Overland and/or Capri, Badger Flat and/or Ortigalita)	Dev/Local
Los Banos	Pioneer Rd. - new/extend - from SR 165 to Ward Rd.	Dev/Local
Merced	G St. - widen to 4 lane arterial - from Yosemite Ave. to Old Lake Rd.	Dev/Local
Merced	Cardella Rd. - new 4 lane arterial - from SR 59 to G St.	Dev/Local
Merced	Gardner Ave. - new/widen - Yosemite Ave. to Old Lake Rd.	Dev/Local
Merced	M St. - new transitway - Lehigh Rd. to Bellevue Rd.	Dev/Local
Merced	Parsons Ave. - new/widen to 4 lane arterial - from Childs Ave. to Yosemite Ave.	Dev/Local
Merced	R St. - new 4 lane arterial - Yosemite Ave. to Bellevue Rd.	Dev/Local
Merced	Yosemite Ave. - new 4 lane arterial - from SR 59 to R St.	Dev/Local
County	Campus Parkway - new 4 lane arterial - Yosemite Ave. to UC Merced (Bellevue Rd.)	Dev/Local

There are needed improvement projects that require additional funding to be implemented. These "Tier Two" projects or unconstrained needs are:

- SR 59 Southern realignment: from SR 59 and Mission Avenue to SR 140. This would complete the "loop" system around the City of Merced. Estimated total cost of $60 million, regional (RIP) cost $40 million.

- Santa Fe Ave. from SR 59 to Winton Way – widen from 4 to 6 lanes. Estimated total cost of $30 million, regional (RIP) cost $13 million.

e. Significant Direct Impacts

The following impacts are projected to occur with full development of the Specific Plan. A fair-share cost analysis will be developed to provide an assessment fee for individual development projects within the project area based on their projected trip generation. Individual projects will be required to submit a Traffic Impact Report that projects the trip generation for that project.

(1) Impact TR-1

Conditions near the SR 99/Childs Avenue interchange will exceed the LOS D minimum. Projected daily traffic volumes on Childs Avenue near the SR 99 freeway exceed the capacity of the planned four-lane arterial. These volumes are indicative of the need to modify the interchange to provide additional capacity, as noted in the Specific Plan goals and policies.

(2) Impact TR-2

Traffic conditions on East 15th Street between D Street and B Street will exceed the LOS D minimum. 15th Street links the project area with the downtown G Street corridor. Under the Specific Plan, the year 2030 volume on the portion of East 15th Street between the D Street railroad crossing and B Street will exceed the LOS D threshold for two-lane urban collector streets (i.e., two lanes plus center turn lane). Recent development of parking lots and buildings in this area make it difficult to widen the roadway to the four-lanes that are needed. This is considered a significant and unavoidable impact. Mitigation measures are provided to help lessen the impact.

(3) Impact TR-3

Traffic conditions on East 13th Street between G Street and SR 59 will exceed the LOS D minimum. 13th Street links the project area with the SR 99 ramps at SR 59 and at G Street. Under the proposed project, the year 2030 volume on the portion of East 15th Street between the "G" Street and SR 59 will exceed the LOS D threshold for a two-lane urban collector street (i.e., two lanes plus center turn lane). This section of roadway passes beneath an SR 99 overcrossing and the right of way occupies the lower embankment of SR 99. These features are likely to preclude widening of the roadway to the four-lanes that are needed. This is considered a significant and unavoidable impact. Mitigation measures are provided to help lessen the impact.

(4) Impact TR-4

Traffic conditions on Childs Avenue between Brantley Street and the SR 99 interchange will exceed the LOS D minimum. The Childs Avenue interchange is a major access to the plan area. Even with development of a four lane arterial street, as envisioned in the plan, under the proposed project the year 2030 volume on the portion of Childs Avenue between Brantley Street and the interchange will exceed the LOS D threshold. LOS D conditions will, however, result under the Alternative land use plan.

(5) Impact TR-5

Traffic conditions on Mission Avenue east of SR 99 will exceed LOS D. Development on the eastern side of the freeway is the primary cause of year 2030 traffic volumes that exceed the capacity of the four-lane roadway that is planned for construction in the near future. A six-lane section will be needed to deliver acceptable conditions on this expressway.

(6) Impact TR-6

Traffic conditions at the SR 99/SR 59 interchange will exceed the LOS D minimum. Projected daily traffic volumes on SR 59 near the SR 99 freeway exceed the capacity of the planned four-lane arterial. These volumes are indicative of the need to modify the interchange to provide additional capacity, as noted in the Specific Plan goals and policies.

(7) Impact TR-7

Traffic conditions on SR 59 from SR 99 to Gerard Avenue will exceed LOS D. SR 59 links the project area with SR 99 and with downtown Merced. While the Specific Plan's circulation plan envisions a four-lane arterial street, forecast volumes in the area north of Gerard Avenue are indicative of conditions in excess of LOS D.

(8) Impact TR-8

Traffic conditions on G Street north of 13th Avenue will exceed LOS D. G Street links the project area with downtown Merced. This four-lane arterial street is projected to operate at LOS E to LOS F under the Specific Plan.

(9) Impact TR-9

Traffic conditions on G Street from 13th Avenue to Childs Avenue will exceed LOS D. This two-lane segment of G Street can be widened to include either an "urban collector" or four-lanes. Widening to four lanes or use of an "urban collector" with access permitted no closer than every 1/8 mile will be needed to achieve LOS D under the Specific Plan.

(10) Impact TR-10

Traffic conditions on D Street across the UPRR will exceed the LOS D standard under the proposed project. This roadway links the project area with 16th Street. Widening to a four-lane section will be needed to deliver LOS D or better conditions under the Specific Plan.

(11) Impact TR-11

Traffic conditions on B Street in the area from 13th Street to Childs Avenue will exceed the LOS D threshold. This portion of B Street will operate at an LOS in excess of the City standard under the Specific Plan. Theoretically, this roadway segment will have to be widened to four lanes to deliver LOS D or better conditions.

(12) Impact TR-12

Intersections in and near the plan area will meet warrants for signalization. Comparison of projected daily traffic volumes with Caltrans warrants for signalization suggests that in addition to the locations noted in the circulation plan, the following intersections are likely to require signalization by the year 2030.

- Childs Avenue / M Street
- East 13th Street / G Street
- East 13th Street / B Street
- East 15th Street / S Street
- East 15th Street / B Street

Gerard Street crossing over SR 99 could reduce the volume of traffic on Childs Avenue to the point that a 6-lane section is not needed.

(5) Mitigation TR-5

Development in the plan area will contribute its fair share to the cost of improving Mission Avenue east of SR 99 to six lanes through the City's Public Facility Finance Fee program.

(6) Mitigation TR-6

Development in the Specific Plan area will contribute its fair share to the cost of modifying the SR 99/SR 59 interchange to meet minimum level of service standards.

(7) Mitigation TR-7

Work with Caltrans and Merced County Association of Governments to prepare a "Project Study Report" (PSR) to determine the feasibility of widening SR 59 to six lanes from SR 99 to Gerard Avenue. Projects within the planning area will be require to contribute a fair share to the cost of modifying the this highway. Given the existing development alongside this roadway, including a cemetery, widening to six-lanes may be infeasible. For purposes of this environmental review, and absent additional information from the PSR, the impact is likely to be significant and unavoidable. Nevertheless, implementation of the above measure will reduce some of the impact.

(8) Mitigation TR-8

G Street north of 13th Street needs to be widened to a 6-lane arterial to improve the LOS. However, it is unlikely that this level of improvement can be accommodated, given right-of-way constraints, especially in the area of the SR 99 ramps. Thus, this impact is considered to be significant and unavoidable.

(9) Mitigation TR-9

Widening to four lanes or use of an "urban collector" with access permitted no closer than every 1/8 mile will be needed to achieve LOS D under the Specific Plan. Development in the Specific Plan area will contribute its fair share to the cost of these modifications and associated right-of-way acquisition needs. The City of Merced will monitor the level of service for this road through traffic studies required of development proposals, and make or require the improvement of said roadway when conditions are warranted.

(10) Mitigation TR-10

The City will submit a request to the Public Utilities Commission seeking safety related improvements for the "D" Street roadway crossing of the Southern Pacific Railroad tracks, east of "G" Street and west of the 16th Street southbound on-ramps to SR 99, and will present the findings of the City concerning the need to increase capacity at said roadway to determine the options available to the City. Widening the existing crossing on D Street across the UPRR may

f. Significant Cumulative Impacts

The traffic impacts listed in this section under *e. Significant Direct Impacts* are based on the growth anticipated in both the City of Merced General Plan and the County General Plan, and the development of this project, as calculated in the MCAG traffic model. Therefore, the cumulative impacts of the project are those listed under Direct Impacts. The mitigation required to reduce impacts to a less than significant impact, or where mitigation is not feasible and the impact has been determined significant, are described for each impact.

3. MITIGATION MEASURES ADOPTED TO MINIMIZE SIGNIFICANT EFFECTS

The following information is provided in accordance with Section 15126.4 of the CEQA Guidelines:

a. Measures that Mitigate Direct Impacts

(1) Mitigation TR-1

Development in the Specific Plan area will contribute its fair share cost of modifying the SR 99/Childs Avenue interchange. The fair-share amount will be determined through specific traffic studies required at the annexation stage of entitlement. This contribution will be collected by the City and placed in a fund to be used specifically for said improvement.

(2) Mitigation TR-2

Modify 15th Street to include an “urban collector” between “B” Street and SR 59, and seek to restrict access to this roadway between “B” Street and “D” Street. Development in the Specific Plan area will contribute its fair share to the cost of these modifications and associated right-of-way acquisition needs. The City of Merced will monitor the level of service for this road through traffic studies required of development proposals, and make or require the improvement of said roadway when conditions are warranted.

(3) Mitigation TR-3

Modify 13th Street to include an “urban collector” between “B” Street and SR 59, and seek to restrict access to this roadway between “G” Street and SR 59. Development in the Specific Plan area will contribute its fair share to the cost of these modifications and associated right-of-way acquisition needs. The City of Merced will monitor the level of service for this road through traffic studies required of development proposals, and make or require the improvement of said roadway when conditions are warranted.

(4) Mitigation TR-4

Childs Avenue between Brantley Street and the SR 99 interchange will have to be widened to a six-lane arterial standard. With this level of improvement, the roadway will operate at LOS C. Alternatively, development of the Henry Street extension across SR 99 to Parsons Avenue or the

not be likely to be approved by the railroad or the Public Utilities commission (PUC). Thus, this impact is considered significant and unavoidable.

(11) Mitigation TR-11

Widen this segment to four lanes using a special cross-section to fit the improvements within the 80-foot right of way that exists. Development in the Specific Plan area will contribute its fair share to the cost of these modifications and associated right-of-way acquisition needs. The City of Merced will monitor the level of service for this road through traffic studies required of development proposals, and make or require the improvement of said roadway when conditions are warranted.

(12) Mitigation TR-12

Development in the plan area will contribute its fair share to the cost of traffic signals at the locations identified in the circulation plan and at the following intersections:

- Childs Avenue / M Street
- East 13th Street / G Street
- East 13th Street / B Street
- East 15th Street / S Street
- East 15th Street / B Street

b. Measures that Mitigate Cumulative Impacts

The traffic impacts listed in this section under *e. Significant Direct Impacts* are based on the growth anticipated in both the City of Merced General Plan and the County General Plan, and the development of this project, as calculated in the MCAG traffic model. Therefore, the cumulative impacts of the project are those listed under Direct Impacts. The mitigation required to reduce impacts to a less than significant impact, or where mitigation is not feasible and the impact has been determined significant, are described for each impact. Additionally, many of the road improvements listed are not currently identified in the City's Public Facility Finance Plan. Thus in order to further implement and reduce identified impacts, the following mitigation measure is applicable.

SOUTH MERCED SPECIFIC PLAN - CIRCULATION CONCEPT

Figure IVG-1

Prepared map by permission of the City of Merced. 2005.

URS

LEGEND

- Specific Plan Boundary
- Highway 99
- "A" - Major Arterial - 128 ft ROW; 6 lanes plus landscaped median
- "B" - Divided Arterial - 118 ft ROW; 4 lanes plus landscaped median
- "C1" - Minor Arterial - 94 ft ROW; 5 lanes (4 with center-turn lane)
- "C2" - Minor Arterial - 94 ft ROW; 4 lanes with landscaped median
- "C3" - Minor Arterial- 74 ft ROW; 3 lanes (2 plus center-turn lane)
- "D" - Collector - 74 ft ROW; 2 lanes (collector)
- "E" - Childs Avenue Special Section - 60 ft ROW; 2 lanes
- Potential Freeway Overpass
- Signalized Intersection
- Right-in / Right-out only

N W E S

Not To Scale

H. PUBLIC SERVICES AND FACILITIES, UTILITIES, AND RECREATION

This section describes how development associated with the South Merced Specific Plan will affect public services and facilities, utilities, and recreation. Where significant effects are identified, mitigation measures are provided to reduce those impacts to the extent feasible.

1. ENVIRONMENTAL SETTING

The following information is provided in accordance with Section 15125 of the CEQA Guidelines. The environmental setting is described based on the *Merced Vision 2015 General Plan* (City of Merced, 1997a) and its Program EIR (City of Merced, 1997b). Both documents are available for review at the City of Merced.

a. Study Area for Direct Impacts

The study area for direct impacts on public services and facilities, utilities, and recreation encompasses the entire Specific Plan area. This area was selected as the study area because it is in the planning stages for future development, and the existing public services and facilities, utilities, and recreation will be affected.

b. Surrounding Area

The City of Merced is located on essentially flat terrain in eastern Merced County within the Central Valley of California, approximately 100 miles southeast of San Francisco and 310 miles northwest of Los Angeles. The South Merced Specific Plan study area comprises 2,052 acres and is bounded on the north by Childs Avenue, by SR 99 on the east, by Mission Avenue/Dickenson Ferry Road on the south, and by West Avenue and the Merced Airport on the west.

c. Study Area for Cumulative Impacts

The study area for cumulative impacts associated with the Specific Plan consists of the City of Merced and Merced County. The City and County were selected as the study area since they provide overlapping services to City residents that may be impacted by development of the Specific Plan. The County provides Sheriff and correctional facility services to the City.

d. Methods

The analysis of public services and facilities, utilities, and recreation impacts is based on a review of the Specific Plan to identify where future development under the proposed Specific Plan may create conflicts with existing public services and facilities, utilities, and recreational uses or result in a demand for utilities and services that cannot be met with the projected supply.

e. Existing Physical Conditions in the Study Area

Various public services and facilities, utilities, and recreational facilities exist within the City of Merced. A brief description of each is provided hereafter.

(1) Fire Protection

Merced's fire protection system operates according to a central station concept. This concept allows the station to respond to calls from within its own service area or district and to provide back-up response to other districts as needed. Currently, five fire stations and one training tower are located within the four fire districts, and a fifth district is planned for the future (Figure IVH-1). The Central Fire Station and Administrative Offices are located at 99 E. 16th Street.

The City of Merced Fire Department is made up of 54 line personnel (15 captains, 18 engineers, and 21 firefighters), 3 battalion chiefs, 2 division chiefs, 1 chief, and 2 secretaries. As of 2006, the annual call volume was 4,400 (Mitten, 2006). The City of Merced Fire Department provides fire protection, rescue, and emergency medical services. Districts 1 and 2 service the Specific Plan area.

(2) Police Services

The City of Merced Police Department provides police services for the entire City. The City is divided into three districts, each with its own police facility and officers (Figure IVH-2). The South District, located at 470 W. 11th Street, provides police services to the Specific Plan area and is staffed by officers and civilian employees. Two of the officers are assigned to two of the district schools and two civilian employees are assigned as public liaisons. The liaisons serve the community and department by providing interpretation and assisting community members with the legal system.

The Merced County Sheriff's Department also provides limited services to the City of Merced. These services include patrol, crime prevention, operation of the SWAT team, and operation and maintenance of the county jail.

(3) Water

The City of Merced received its water from the Merced River via Lake Yosemite until 1917. Since that time, Merced has become primarily dependent on groundwater, which is generally supplied by runoff from the foothills and mountains. The water then percolates through the soil to the San Joaquin basin, from which the City then draws its water.

The City of Merced's wells have an average depth of 414 feet and range in depth from 161 feet to 800 feet. The depth of these wells suggests that the City of Merced is drawing its water supply primarily from a deep aquifer associated with the Mehrten Formation, which is found at a depth of approximately 300 feet.

The City's water supply system consists of four elevated storage tanks with a combined storage capacity of approximately 1.4 million gallons, and 19 active wells sites, which have a combined capacity of 49,500 gallons per minute (gpm). These make up the City's total water supply (Brown and Caldwell, 2005).

In 1992, the City of Merced and the MID entered into a Memorandum of Understanding (MOU) to develop a long-range water resources plan. In 1995, the *Merced Water Supply Plan* (CH2M HILL, 1995) was created, establishing goals for managing groundwater resources and for providing a continued, high quality supply of water. In 2001, the *Merced Water Supply Plan Update* was prepared (CH2M HILL, 2001). Both plans addressed the problems of water supply, which were compounded by the increasing demand for water from population growth, persistent drought, and a change by agricultural users from surface water to groundwater. These increased demands have resulted in a decrease in groundwater levels and have led to overdraft of the aquifer.

At the completion of the 1995 and 2001 plans, recommended actions to restore the aquifer were made, and a preferred alternative was identified. The preferred alternative indicated that the study area will remain on groundwater, and that groundwater levels will be stabilized at 1999 levels, by recharging the groundwater basin with imported surface water from the Merced River. A pilot study on groundwater recharge basin is currently being conducted. (Brown and Caldwell, 2005).

A Water Supply Assessment (SB 610) was prepared for the project (Appendix G). The result of this report is summarized below.

Future water supplies for the SMSP project area and cummulative development with the SUDP area would consist of groundwater pumping from the Merced groundwater Sub- basin. According the DWR the Merced Sub-basin is in a mild state of overdraft. However the City working jointly with MID and others have developed a groundwater management plan (GWMP) the goals and objecives of which include restoring and preserving groundwater at 1999 levels through a combination of actions previously described. The estimated water demand for the SMSP area was included in analyses conducted as a part of the 2005 UWMP, the 2001 Merced Water Supply Plan Update and the City of Merced, Specific Urban Development Plan analyses. With onging implementation of the recommendations in these Plans the City will be able to meet its future water demands and support the broader basin-wide objectives. Therefore, future water supplies would be adequate to meet the water demands of the SMSP area**.**

(4) Wastewater Collection and Disposal

The City of Merced provides for the collection and treatment of wastewater within the City's urban areas. Wastewater generated by residential, commercial, and industrial users is treated at the wastewater treatment facility.

The City's Wastewater Treatment Plant, located in the southwest part of the City, approximately two miles south of the airport, has a permitted capacity to treat 10 million gallons per day (mgd). In 2005, the treatment plant was projected to treat 9 mgd (Brown and Caldwell, 2005). Actual flow was 8.5 mgd. According to the Merced Vision 2015 GP EIR (City of Merced, 1997), no major expansion of this facility has occurred since 1980. The current design capacity of the treatment plant can support a population of approximately 77,000.

Treated effluent is disposed of in various ways, depending on the time of year. Most (75%) of the treated effluent is discharged through the Hartley Slough throughout the year. Water from the slough is subsequently recycled and used for agricultural irrigation. The remaining effluent is disposed of at the City-owned wetland area south of the treatment plant.

(5) Storm Water Drainage and Flood Control

The Merced Vision 2015 GP EIR (City of Merced, 1997b) EIR states that the SUDP area, which includes the Specific Plan, is located "within the San Joaquin/Merced River drainage basin/water shed (p. 4.3.6)." According to the Floodplain Map (Figure IVH-3) prepared for the Specific Plan, the entire plan area lies within a 100-year floodplain. This mapping designation indicates that the Specific Plan area has a statistical chance of being flooded once every 100 years.

The *Merced County Critical Area Flooding and Drainage Plan* (MCAG, 1982) addresses the collection and disposal of surface water runoff that originates in, or passes through, a 180-square-mile area, including the City's SUDP area. Systems of storm drain pipes and catch basins are laid out, sized, and costed in the plan to serve present and projected urban land uses.

It is the responsibility of the subdivider to insure that utilities, including stormwater and drainage facilities, are installed in compliance with City regulations and other applicable regulations. Necessary arrangements with the utility companies or other agencies will be made for such installation, according to the specifications of the governing agency and the City (Ord. 1342 § 2 (part), 1980: prior code § 25.21(f)). According to the Merced Vision 2015 GP EIR, the City requires the construction of stormwater percolation/detention basins with new development (p. 4.9.2). These facilities are designed to temporarily collect runoff that is then metered into canals and streams.

(6) Solid Waste

There are two active landfills, the SR 59 Landfill and the Billy Wright Landfill. Both landfills are owned by MCAG and operated by the Merced County Department of Public Works. The City of Merced provides services for all refuse pick-up within the City limits. In addition to these two landfill sites, there is one private disposal facility, the Flintkote County Disposal Site, at SR 59 and the Merced River. This site is restricted to concrete and earth material.

(7) Schools

The public schools within the City of Merced are operated by three separate school districts, each with its own governing body and sources of funding. These school districts are:

- Merced City School District (elementary and middle schools);
- Merced Union High School District (high schools, continuing and adult education, etc.); and

- Weaver Union School District (serving a small area in the southeastern part of the City with elementary schools).

The School land-use designation within the Specific Plan area comprises 26 gross acres (20 net acres). School sites have specific requirements for their location, and the most common and non-conflicting neighboring land use is Residential. The existing Reyes Elementary School site (Merced City School District) is located at the intersection of O Street and Childs Avenue. The recently approved Farmdale Elementary School site (Weaver Union School District), located at the intersection of G Street and Mission Avenue, is proposed to open in 2007.

The City of Merced coordinates with the various school districts on the locations of future school sites. This coordination stems from a 1994 agreement that the County and City entered into with the various school districts that serve the City. The agreement specifies that prior to any new legislation granting approval of new residential development, the developer is required to enter into an agreement to pay a mitigation fee to the affected school districts. This mitigation fee is designed to cover a portion of the costs for providing new facilities resulting from the new development. According to the Merced Vision 2015 GP EIR, the remaining costs of the new facilities are to be, "obtained through participation in the State building program, bond measures, etc." (p. 4.9.11).

(8) Library Services and Cultural Facilities

The Merced County Library system was established in 1910, and at its peak provided services at the Main Branch in Merced and 18 other locations throughout the County. However, since 1992, library services have been scaled back by the County. To counteract these reduced services, in 1997 the City and County adopted a property tax sharing agreement specifying that the County will receive a share of the tax increment from Redevelopment Project Area #2 specifically for library purposes; this could amount to as much as $8 million through 2014.

Current library services within the City of Merced are provided at the Main Branch, which is located next to the Courthouse Museum at 22nd and O Streets, and at Merced College's Lesher Library.

A variety of art facilities and programs are hosted by the City of Merced and are supported by private funds. One such organization is the Merced County Regional Arts Council. The Arts Council manages the Merced County Arts Center and Arbor Gallery in downtown Merced and sponsors numerous art programs.

In addition to the Arts Council, the Merced Open Air Theater located in Applegate Park hosts concerts, theatrical performances, and art displays.

(9) Other Public Services and Facilities

The City owns and operates several public facilities, including the Merced Civic Center, located at 18th and N Streets, which houses most City departments and hosts public meetings of the City Council and other City boards and commissions. The City also operates the Transpo Center, the

Community Center, the Merced Municipal Airport, the City Corporation Yard, the Ralph H. Shannon Parcade, and other City parking lots.

Major medical services are provided by Merced's two hospitals: Mercy (Dominican) and Mercy Medical Center. Mercy (Dominican), located on the corner of Bear Creek and M Streets, provides outpatient services, and is currently carrying out an expansion plan for a new health care campus, including a Cancer Center. Mercy (Dominican) is affiliated with UC Davis. Beds are located at Mercy Medical Center.

Mercy Medical Center, which currently serves the City, is located near 13th and D Streets. It contains176 beds and is the most comprehensive acute care facility in Merced County.

In addition to the services provided by the City of Merced, the federal and/or state governments provide Social Security and the Department of Motor Vehicles.

Private companies provide services for natural gas, electric, and telephone to the residents of the City of Merced.

(10) Utilities

Merced has both a major regional provider and a locally owned public utility. Pacific Gas and Electric provides a wide variety of pricing options, competitive industrial rates, financial incentives, economic and financial analysis, and assistance with facility siting. MID has recently undertaken an initiative to provide low-cost electric power to Merced, particularly industrial and commercial users. PG&E provides natural gas throughout Merced.

(11) Recreation

The City of Merced uses a standard formula to establish how many acres of park land are required for its residents (5 acres for every thousand residents). In addition to the 5 acres of parkland per thousand people, these areas are supplemented by other open space lands (i.e., school and church grounds and Lake Yosemite). According to the *Merced Vision 2015 General Plan* and the 2004 Park and Open Space Master Plan, however, the standard is not being met and parkland acreage has not kept up with the expanding population.

As of 2006, the city had a total population of 76,893. Per the 2004 City of Merced's Park and Open Space Mater Plan, the City has approximately 345 acres of park land. This figure is derived from its 187 acres of active park land, 129 acres of linear parkland including bike paths and more than 29 acres of undeveloped park land (these designations are described in more detail below). Based on the 2006 population level and the approximate acres of park land within the City, there is approximately 4.4 acres of park land per 1,000 residents. However, in terms of developed park land, only 187 acres have been developed in the City, which equates to 2.43 acres of park land per 1,000 residents. If one were to include the 129 acres of linear park land to the 187 acres of active park land, this would still only equate to 4.1 acres of park per 1,000 residents. Both of these figures are far below the desired figure of 5 acres.

There are four types of park facilities within the City of Merced: mini-parks, neighborhood parks, community parks, and greenways. The first three types of parks provide active play space, while greenways provide a connection for pedestrians and bicyclists to various sites throughout the City. There are 34 park facilities within the City; the larger include Joe Herb Park, Applegate Park, Fahrens Park, and Rahilly Park.

f. Project Design Elements that Avoid Public Services and Facilities, Utilities, and Recreation Impacts

Although the Specific Plan area will be developed primarily as a result of the implementation of the Specific Plan, there are provisions to add additional public services and facilities, utilities, and recreation features to maintain existing levels of service and meet future demands. The City of Merced's Municipal Code (MMC 17.62.010) requires that certain public facilities be constructed and/or compensated to offset resources lost as a result of future development. Compensation is made through the collection of public facilities impact fees and is collected to help share the cost of constructing new or improved facilities.

g. Adopted Policies and Regulations that Avoid Public Services and Facilities, Utilities, and Recreation Impacts

Table IVH-1 describes policies found in the *Merced Vision 2015 General Plan* and this Specific Plan that are designed to minimize impacts to public services and facilities, utilities, and recreation.

TABLE IVH-1

General Plan and Specific Plan Policies that Minimize Impacts

GP Policy P-1.1: Provide adequate public infrastructure and services to meet needs of future development.	
1.1.a	Through development review, ensure that utilities are adequately sized to accommodate the proposed development and, if applicable, allow for extensions for future developments, consistent with master plans.
1.1.b	Master infrastructure plans for newly developing areas and adopted as necessary.
1.1.c	Include in Specific Plans and master plans, a phasing plan for providing access, sewer, water, drainage, flood control, schools, parks and other appropriate governmental facilities and services.
1.1.d	Construct a Stormwater drainage system, water system and sewer system in accordance with master plans.
1.1.e	Apply for Federal, State and regional funding sources set aside to finance infrastructure costs to the maximum extent.
GP Policy P-1.2: Utilize existing infrastructure and public service capacities to the maximum extent possible and provide for the logical, timely and economically efficient extension of infrastructure and services.	
1.2.a	Develop plans which establish priorities to address existing inadequacies in the City's infrastructure system.
1.2.b	Expand existing facilities to the extent possible at present locations.
1.2.c	Periodically evaluate the City's service delivery system and identify policies and programs that may improve operating efficiency and/or reduce service delivery costs.

TABLE IVH-1 (Continued)

General Plan and Specific Plan Policies that Minimize Impacts

GP Policy P-1.3: Require new development to provide or pay for its fair share of public facility and infrastructure improvements.	
1.3.a	Prepare and adopt adequate fee schedules commensurate with the cost of planned improvements and services, with annual review and update.
1.3.b	Periodically evaluate the City's service delivery system and identify policies and programs which may be applied to new development to improve operating efficiency and/or reduce service delivery costs.
1.3.c	All new development shall contribute its fair share of the cost of on-site and off-site public infrastructure and services as appropriate.
1.3.d	The City may require development to install off-site facilities that also benefit other properties.
GP Policy P-2.1: Maintain sufficient public protection facilities, equipment and personnel to serve the City's needs.	
2.1.a	Periodically review existing and potential station facilities, equipment and manpower in light of protection service needs.
2.1.b	Determine that new development is adequately served by fire and police protection services.
2.1.c	Fire station sites should be selected based on the distribution of land uses and population projected when the area is fully developed.
2.1.d	Ease of access should be a primary consideration in selecting a fire station site.
2.1.e	Maintain an adequate and reliable water system to serve fire protection needs.
2.1.f	Provide fire facilities and related resources to support the "central station concept."
2.1g	Utilize existing community resources, to the maximum extent feasible, in the provision of public protection services.
2.1.h	Assure that new development utilizes modern public protection concepts in their design and development.
GP Policy P-3.1: Ensure that adequate water supply can be provided within the City's service area, concurrent with service expansion and population growth.	
3.1.a	Pursue innovative programs to reduce the demand for potable ("drinkable") water.
3.1.b	Update the City's Water Master Plan for the Sphere of Influence Area.
3.1.c	Update the City's Water Master Plan to include the entire expanded City Specific Urban Development Plans (SUDP) area.
3.1.d	Review the current water system maintenance program and coordinate planned water main replacements with the updated Water Master Plan.
3.1.e	Continue to work with Merced Irrigation District and the County of Merced to ensure that adequate water supply and distribution facilities can be developed to meet the growth of the Merced metropolitan area.
3.1.f	Continue to support policies and programs which discourage the use of private wells and water systems within the City limits.
3.1.g	Plan and design water facilities to efficiently serve the City's urban area.
3.1.h	The City shall not extend water service outside its incorporated limits.
GP Policy P-3.2: In cooperation with the County and the Merced Irrigation District (MID) work to stabilize the region's aquifer.	
3.2.a	Work closely with the State and County agencies in exploring innovative technology and procedures for water conservation and reuse.
3.2.b	Work cooperatively with MID to preserve and enhance its surface water delivery system.
3.2.c	Explore the use of MID water resources for applications that do not require treated water to reduce demand on the regional groundwater supplies and reduce costs of water treatment.
3.2.d	Cooperate with MID and the County in the development of groundwater recharge facilities as called for in the Merced Water Supply Plan.
3.2.e	Obtain, purchase or preserve rights to open space such as transitioning agricultural lands for proposed major treatment plants, groundwater recharge and storage facilities.

(7) Impact PS-7

The Specific Plan may fail to provide adequate sites for the development of needed public service facilities relative to schools.

All three school districts that serve the City of Merced filed letters (each dated May 16, 2006) with the City in response to the Notice of Preparation for this Specific Plan EIR indicating that current enrollment exceeds student capacity within the districts. *This impact can be fully mitigated* through the implementation of identified GP Policies P-1.1, P7-1, P-7.2, and P-8.2.e, and the adoption of certain mitigation measures presented hereafter. Additionally, the land use diagram of the South Merced Specific Plan was crafted with the input from the school districts and includes designations and policies to ensure that school siting needs are properly assessed at time of annexation and zoning. The plan includes sites for an elementary or middle school for the Weaver Elementary School District and a high school for the Merced Union High School District.

Based on the information provided in those letters, implementation of the Specific Plan will generate additional elementary, middle, and high school students. Students generated upon buildout of the Specific Plan may exacerbate existing conditions in overcrowded schools.

Merced Vision 2015 General Plan Policy P-7.1.h requires that school facility impact fees be collected. These fees will contribute funding for new school facilities for the students potentially generated by the Specific Plan. Pursuant to Section 65995 (3)(h) of the California Government Code (Senate Bill 50, chaptered August 27, 1998), the payment of statutory fees "…is deemed to be full and complete mitigation of the impacts of any legislative or judicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization."

(8) Impact PS-8

The Specific Plan may fail to provide adequate sites for the development of needed public service facilities relative to libraries and other cultural facility services.

Increased growth in the City of Merced, surrounding areas, and throughout the County of Merced can be expected to increase demands on library services. The *Merced 2015 Vision General Plan* intends that the County library system provide neighborhood-level service within the City of Merced. With implementation of GP Policies P-1.1, P-1.3, P-8.1, P-8.2, and P-8.3 and SP Policy OS-1.3, impacts to libraries and cultural services will be considered *less than significant*.

(9) Impact PS-9

The Specific Plan may conflict with adopted public service goals for the City of Merced or fail to provide adequate sites for the development of needed public service facilities.

TABLE IVH-1 (Continued)

General Plan and Specific Plan Policies that Minimize Impacts

GP Policy P-4.1: Provide adequate wastewater collection, treatment and disposal capacity for projected future needs.	
4.1.a	Maintain the existing wastewater system to increase the lifetime of the system.
4.1.b	Develop wastewater master plans to serve future Merced urban expansion.
4.1.c	Design wastewater collection systems that discourage development of prime agricultural soils.
4.1.d	Coordinate wastewater planning activities with the County.
GP Policy P-4.2: Consider the use of reclaimed water to reduce non-potable water demands whenever practical.	
4.2.a	Consider designs for reclaimed water systems, including pipelines, pump stations and storage ponds, to primarily serve as irrigation for feed and fodder crops.
4.2.b	Consider conducting a reclaimed water market study to identify potential users.
4.2.c	Consider preparing a plan for the use of reclaimed water which evaluates the facilities and costs required to serve potential users, determines capacities of facilities, and presents an implementation plan.
GP Policy P-5.1: Provide effective storm drainage facilities for future development.	
5.1.a	Continue to implement, along with MID and Merced County, the *Merced County Critical Area Flooding and Drainage Plan* within the Merced urban area under the overall jurisdiction of the Merced County Flood Control District (MCFCD).
5.1.b	Work with the MCFCD, MID and the County to update the *Merced County Critical Area Flooding and Drainage Plan* to account for changes in expected storm drainage runoff due to expanded land uses within the Merced area.
5.1.c	In cooperation with MID and the County, prepare a storm drainage master plan to meet the requirements of the Clean Water Act.
5.1.d	Continue to require all development to comply with the *Merced County Critical Area Flooding and Drainage Plan* and any subsequent updates.
5.1.e	Installation of facilities necessary to provide services to development projects will be based on the full buildout scenario.
GP Policy P-5.2: Integrate drainage facilities with bike paths, sidewalks, recreation facilities, agricultural activities, groundwater recharge and landscaping.	
5.2.a	Provide drainage channels in transportation or canal easement areas as much as feasible.
5.2.b	Stormwater detention and groundwater recharge ponds should be designed to appear natural in character as much as feasible and dual use of recreation facilities should be promoted where conditions are compatible.
GP Policy P-6.1: Establish programs to recover recyclable materials and energy from solid wastes generated within the City.	
6.1.a	Implement source reduction and recycling programs to minimize waste at the point of manufacture or use.
6.1.b	Work with County officials in seeking federal or state funds for projects utilizing resources and material recovery processes.
6.1.c	Participate in resource and material recovery studies.
GP Policy P-6.2: Minimize the potential impacts of waste collection, transportation and disposal facilities upon residents of Merced.	
6.2.a	Intermediate processing facilities and materials recycling facilities should be distanced and buffered from sensitive land uses.
6.2.b	Cooperate with Merced County to implement recommendations for source reduction programs which have the least environmental and economic impacts on the City and its residents.
6.2.c	Continue implementation of programs in cooperation with the County of Merced to meet solid waste diversion goals.

TABLE IVH-1 (Continued)

General Plan and Specific Plan Policies that Minimize Impacts

GP Policy P-7.1: Cooperate with Merced area school districts to provide elementary, intermediate and high school sites that are centrally located to the populations that they serve and adequate to serve community growth.	
7.1.a	Cooperate with Merced Area School Districts to provide elementary, intermediate and high school sites that are centrally located to the populations that they serve and adequate to serve community growth.
7.1.b	Explore opportunities for new school facilities, located in urban centers, to include joint use facilities for other City, County and secondary education service provider programs and services.
7.1.c	In general, schools should be located within neighborhoods near parks, bikeways, and other open space amenities. In urban village areas, schools should be located adjacent to Village Core Residential (higher density) areas.
7.1.d	Monitor the residential growth within the City and make that information available to the local school districts to facilitate school planning efforts.
7.1.e	School Districts will select new school sites consistent with the Land Use Diagram and based on its own site selection studies in coordination with the City of Merced.
7.1.f	Designate specific school site locations on the Land Use Diagram as needs and sites are identified and ensure their compatibility with adjacent development.
7.1.g	Elementary school sites should be encouraged to locate on collector streets near but not directly on major streets.
7.1.h	Cooperate with school districts to ensure that school facility impact fees are collected.
7.1.i	Work with the school districts to obtain adequate funding for infrastructure improvements on and adjacent to school sites.
GP Policy P-7.2: Support higher educational opportunities.	
7.2a	Work with Merced Community College to ensure that facilities and grounds are available to meet future student needs.
7.2.b	Work closely with both the Merced Community College District and University of California Chancellor's Office to assure that adequate community infrastructure is available to meet their institutional needs.
7.2.c	Work with the County and UC San Joaquin (Merced) planning staff in the preparation of necessary plans and studies for the development of the UC Campus site and grounds.
GP Policy P-8.1: The city will support the cultural and health related needs of the community by incorporating such facilities and services in development and redevelopment proposals.	
8.1.a	Encourage a range of health related facilities in Merced to meet the needs of growing and aging population, including rehabilitation centers, walk-in medical centers, and full service hospitals.
8.1.b	Encourage the planning and implementation of a multi-cultural and performing arts program and facilities in the downtown area of Merced.
8.1.c	Examine the needs for developing youth services programs and supporting facilities.
8.1.d	Review the long-term feasibility of development of a motel/convention center in the downtown core area.

TABLE IVH-1 (Continued)

General Plan and Specific Plan Policies that Minimize Impacts

GP Policy P-8.2: The City shall promote consolidation of complementary or support services to avoid duplication.	
8.2.a	Within the Urban Village Core areas, senior centers, satellite libraries, adult education, recreation and/or other public facilities should be located in proximity to each other in the Village Core mixed-use areas to allow for integrated activities.
8.2.b	Target downtown Merced as the central location for public and government facilities in the City (e.g., County and City government centers, civic center, post office, hotel/conference center, department of motor vehicles, federal and state offices, etc.).
8.2.c	Encourage day care centers to locate near schools and employment centers to allow for before and-after-school care and one stop convenience for pre-school/daycare facilities for toddlers and infants.
8.2.d	Promote the development of shared cultural and recreational facilities between the community and local educational facilities.
8.2.e	Continue to encourage parks to be located adjacent to schools in order to promote the joint use of buildings and sports facilities.
GP Policy P-8.3: Work with others to study innovative ways of delivering library services at the neighborhood level to promote community education and provide a focus for community activity and cultural development.	
8.3.a	Explore ways to incorporate “information access” into public facilities and buildings.
8.3.b	Work with the County of Merced to define an efficient means of maintaining and delivering library services within Merced urban area.
8.3.c	Explore cooperative library facility development with local school districts and secondary education institutions.
8.3.d	Explore the expansion of the City’s telecommunications resources to encompass access to City documents and other resources.
GP Policy S-4.1: Promote the concept of fire protection master planning with fire safety goals, missions and supporting objectives for the community.	
4.1.a	Provide additional fire station locations as expansion of the City occurs in order to maintain a response objective of 4 to 6 minutes citywide.
4.1.b	Work with the Fire Department and the Environmental Health Division to identify fire districts that will require specialized manpower and equipment, such as businesses that use hazardous materials, and request that land uses or structures with similar needs be confined to these districts.

TABLE IVH-1 (Continued)

General Plan and Specific Plan Policies that Minimize Impacts

GP Policy S-4.2: Maintain a reasonable level of accessibility and infrastructure support for fire suppression, disaster and other emergency services.	
4.2.a	Continue to use 8-inch or larger pipe in high-valve districts. In residential districts, additional "looping" or completion of water main grids shall continue to be provided where possible so lengths of 6-inch pipe on the long side block will not exceed 600 feet.
4.2.b	Maintain current standards defined in the Uniform Fire Code and City Standards for the spacing of fire hydrants. In general, these standards call for 500-foot spacing in residential areas and 300-foot spacing in commercial and industrial areas.
4.2.c	Continue to provide fire prevention and disaster preparedness information through the schools, public interest groups and other facilities and people.
4.2.d	Expand the inspection program to include the following recommendations by the Insurance Services Office of California: a. Perform fire prevention inspections of all buildings other than dwellings once a year, except hazardous occupancies which should be inspected twice a year. b. Establish a program of adequate reinspection of electrical wiring and equipment.
4.2.e	Expand the present nuisance abatement program to include a height limit on weeds during the dry season (mid-April through mid-November) in both vacant and developed lots, abandoned vehicles and vacant buildings.
GP Policy S-6.1: Provide superior community-based police services.	
6.1.a	Continue programs, such as "Neighborhood Watch" which will increase residents' involvement in, and ownership of, police operations.
6.1.b	Direct services and outreach programs towards youths in the community.
6.1.c	Locate future facilities to enhance the "community policing" concept through the expansion of existing or the addition of new police service districts as the City grows.
GP Policy S-6.2: Provide services and personnel necessary to maintain community order and public safety.	
6.2.a	Maintain a police force sufficiently staffed and deployed to ensure quick response times to emergency calls.
6.2.b	Encourage approaches to crime prevention to be designed into new buildings and subdivisions.
6.2.c	Identify changes to current laws and ordinances or create new ones to help carry out crime prevention strategies.
SP Policy I-1.1: Provide storm-water drainage facilities to minimize flooding and to provide for pedestrian movement.	
1.1.a	Create a storm-drain system with basins that simulate natural water features alongside the Class I Ped/Bike Path System.
1.1.b	Include key infrastructure deficient sites in capital improvement plans, financing plans, and other existing City mechanisms to begin the process of improving or installing missing infrastructure, namely: a. Storm-drainage on Childs Avenue, east of SR 59; b. Signal installation and roadway alignment of SR 59 and Childs Avenue;
	c. Near-term pavement and street light improvements on Mission Avenue between SR 59 and State Highway 99; d. The Childs Avenue / State Highway 99 interchange; and e. Removal of sight obscuring features that could cause traffic safety concerns, for example, at the intersection of Childs Avenue and "B" Street.
1.1.c	As part of annexation proposals, inventory where public improvement upgrades to City Standards is needed. Seek to require new growth to provide for these improvements throughout the entire annexation area.
1.1.d	Ensure that infrastructure required of private development projects permitted in Merced County (but within future City limits) is documented and installed at the earliest possible time.

TABLE IVH-1 (Continued)

General Plan and Specific Plan Policies that Minimize Impacts

SP Policy OS-1.1: Develop a safe pedestrian and bicycle system with routes between open space resources, schools and key destinations in South Merced.	
1.1.a	As development occurs, require construction of this plan's primary and secondary Class I (off-street) Bike/Pedestrian Path System. The "primary" route is distinguished from the "secondary" route by its width, additional open space, and preference to be located away from paralleling streets where possible. The secondary routes are narrower and located alongside collector roads.
1.1.b	The Class I Bike/Pedestrian Path System between Henry Street and Tyler Avenue is envisioned to be a wide linear park whose primary feature is a storm-drain system with sinuous basins that simulate a natural water feature.
1.1.c	As determined by City Staff on a site-by-site basis, the width and design of the Class I Bike/Pedestrian Path System will vary throughout the planning area depending upon adjacent land uses, use of storm-water basins and traffic needs and impacts. An overall minimum width of 82 feet as depicted in Figure 6.1 of the *Merced Park and Open Space Master Plan* (page 6-50) should be assumed in the initial design of a project. Variations to this width are probable.
1.1.d	Design arterial and collector street intersections and roadway segment cross-sections with wide medians and curb "bulb-outs" in order to: (a) shorten the time a pedestrian or bicyclist is located in the travel lanes; (b) create a safe-haven in the center median; and (c) serve as traffic calming.
1.1.e	In all situations, the Class I Bike/Pedestrian Path System shall be designed and constructed to provide for ample lighting and surveillance opportunities from adjacent land uses and streets. Where the pathway runs next to a cul-de-sac, broad vision-corridors (instead of narrow view sights between buildings and fences) shall be provided.
1.1.f	As part of annexation proposals, conduct a study to determine where improvements are missing, then implement a program to install missing sidewalks; crosswalks; bike facilities; and lighting.
SP Policy OS-1.2: Provide high-quality park and recreational facilities.	
1.2.a	Consider the expansion of Flanagan Park to the east for use as larger sports fields.
1.2.b	Install picnic benches, lights and other park-related features at existing parks where needed.
1.1.c	Continue efforts to acquire new park sites within future growth areas in advance of development to meet the recreational open space needs of a growing population.
1.2.d	With regard to the regional park, engage the citizens of Merced for the purposes of gathering comments and ideas to help create a community-based concept for its design and use.
SP Policy OS-1.3: Develop Unique Features in the planning area to attract visitors and residents from other parts of the City.	
1.3.a	Develop a signature 40-acre regional park as a draw to the planning area and include notable features such as soccer and baseball sports fields; a waterplay feature; an open air theater; a meeting hall/community hall (for wedding/events); slow pitch softball fields; a skate park or BMX circuit.
1.3.b	Encourage the siting of the following as part of or near the regional commercial shopping center or regional park: a. Private water theme park; b. Youth facility; c. Batting cages, miniature golf, or similar commercial recreational use; d. Year-round aquatic recreation facility; and/or e. Arts facility.
1.3.c	Encourage access to retail, cultural shops and markets, art galleries and restaurants serving an array of ethnic foods.
1.3.d	As part of new neighborhood, community and regional shopping centers, develop public plazas that include items such as distinctive water features; colorful gardens; benches & gazebos; performance and teaching spaces.

Sources: *Merced Vision 2015 General Plan* (City of Merced, 1997a); *South Merced Specific Plan* (City of Merced, 2006b).

2. CONSIDERATION AND DISCUSSION OF SIGNIFICANT ENVIRONMENTAL IMPACTS

The following information is provided in accordance with Section 15126.2 of the CEQA Guidelines and the local City of Merced's adopted thresholds of significance, specified in the Vision 2015 GP EIR (City of Merced, 1997b). The local thresholds are in addition to those required pursuant to CEQA.

a. Environmental Considerations Suggested in CEQA

Appendix G of the CEQA Guidelines suggests that a project could have a significant impact on Public Services or Utilities and Service Systems, as described hereafter.

(1) Public Services

If the project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

(a) Fire protection;

(b) Police protection;

(c) Schools;

(d) Parks;

(e) Other public facilities.

(2) Utilities and Service Systems

Would the project:

(a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

(b) Require or result in the construction of new water or wastewater treatment facilities, the construction of which would cause significant environmental effects?

(c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?

(d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

(e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

(f) Be served by a landfill with sufficient permitted waste capacity to accommodate the project's solid waste disposal needs?

(g) Comply with federal, state and local statutes and regulations related to solid waste?

(3) Recreation

(a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

(b) Does the project include recreational facilities or require construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

b. Rationale for Establishing Local Thresholds

Consistent with CEQA Guidelines, the City of Merced, through the adoption of the Merced Vision 2015 GP EIR, adopted several thresholds of significance that are used in determining the Specific Plan's impact on public services and facilities, utilities, and recreational resources. Adoption of these thresholds allows the City of Merced to provide standards of significance in addition to those provided solely by CEQA. These thresholds are described in detail hereafter.

c. Thresholds of Significance Adopted in This EIR

The City of Merced, as the Lead Agency, has adopted the following as thresholds of significance, consistent with CEQA Guidelines, and has determined that impacts related to public services and facilities, utilities, and recreation will result if the Specific Plan:

(1) Would conflict with adopted public service or utility plans and goals for Merced.
(2) Would create governmental service and utility demands in excess of projected supply.
(3) Would breach published national, state, or local standards relating to solid waste collection and disposal.
(4) Would fail to provide adequate sites for development of needed public service facilities such as schools, parks and playgrounds, public protection facilities and general governmental services.
(5) Would extend urban service capacity into areas not planned for population growth.
(6) Would conflict with established recreational uses in the City's planning area.
(7) Would reduce park and facilities standards of the City.

d. Regulatory Setting

(1) State

(a) Government Code Section 65995(e).

The California Government Code has adopted significant restrictions on the ability of local agencies to analyze and mitigate impacts to schools.

State law prohibits a local agency from either denying approval of a land-use project because of inadequate school facilities or imposing school impact mitigation measures other than designated fees. The California Legislature has found and declared that the mitigation of the impacts of land-use approvals on the need for school facilities[1] are matters of statewide concern. For this reason, the Legislature has occupied the subject matter of requirements related to school facilities levied or imposed in connection with, or made a condition of, any land-use approval, and the mitigation of the impacts of land-use approvals on the need for school facilities, to the exclusion of all other measures, whether financial or non-financial.

In addition, the payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Education Code Section 17620, in the amount specified in Government Code Section 65995 and, if applicable, any amounts specified in Sections 65995.5 or 65995.7, is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property on the provision of adequate school facilities.[2] In fact, a state or local agency may not deny or refuse to approve a legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property on the basis of a person's refusal to provide school facilities mitigation that exceeds the amounts authorized pursuant to Government Code Section 65995 or pursuant to Sections 65995.5 or 65995.7, as applicable.[3]

Accordingly, mitigation on the need for school facilities in land-use approvals is limited by the California Legislature to the payment of mitigation fees under Government Code Sections 65995, 65995.5, or 65995.7, as applicable, and the payment of such fees is deemed to be full and complete mitigation of the impacts of any local agency action involving the planning, use, or development of real property.

While current state law limits the consideration by cities and counties of school facilities issues in the land use approval process, local governments still have the power to use the General Plan and zoning to reserve and designate areas for schools. For example, California Government Code Section 65302 mandates that General Plans include a Land Use Element that designates the proposed general distribution, location, and extent of various land uses, including educational facilities. The *Merced Vision 2015 General Plan* accomplishes this through a set of policies and by designating "floating school" sites throughout the planning area. These future school sites are

[1] "School facilities" is defined as any school-related consideration relating to a school district's ability to accommodate enrollment [Government Code §65995(e)].
[2] Government Code §65995(h).
[3] Government Code §65995(i).

referred to in this way because the actual location of school sites is determined at a later stage in the planning and development of the City (e.g., during annexation or subdivision platting).

(b) California Water Code

California Water Code (Division 6, Part 2.6, Sections 10610 through 10657) requires every water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to adopt and submit an Urban Water Management Plan every 5 years (Brown and Caldwell, 2005) to the Department of Water Resources. The Plan includes an identification of available water, water use reclamation, and water conservation strategies. The California Water Code requires the public water system, city, or county to submit plans for acquiring the required water supply for a proposed project if the water supply plan concludes that water supplies are or will become insufficient.

(2) Local

The City of Merced's Municipal Code, Chapter 18.40, Park Dedication, requires the following:

"At the time of approval of a tentative tract map or parcel map, the director of recreation and parks shall determine pursuant to this chapter the land required for dedication or in-lieu fee payment. As a condition of approval of a final subdivision map or parcel map, the subdivider shall dedicate land; pay a fee in lieu thereof, or both, at the option of the City, for neighborhood and community park or recreational purposes at the time and according to the standards and formula contained in this chapter."

e. Significant Direct Impacts

For ease of the reader, the following references to General Plan (GP) and Specific Plan (SP) policies are listed by their applicable policy number. A complete and detailed explanation of each policy is presented in Table IVH-2.

(1) Impact PS-1

Implementation of the Specific Plan may conflict with adopted public service plans and goals for the City of Merced relative to fire protection.

Development under the Specific Plan will increase the number of residents served by the City of Merced Fire Department, which will impact the ability of the Fire Department to meet its service area goals. These goals consist of a response time of four to six minutes for the first crew to arrive at a fire or medical emergency within an assigned district. However, through implementation of GP Policies P-1.1, P-1.2, P-1.3, P-2.1, S-4.1, and S-4.2, this will be a *less than significant impact.*

(2) Impact PS-2

Implementation of the Specific Plan may conflict with adopted public service goals for the City relative to police services.

The Specific Plan will increase the number of residents, which will impact the City of Merced's Police Department's ability to maintain identified General Plan and Specific Plan policies. Current police goals require the staffing of one officer per thousand residents. If this goal is not met, the Police Department will need to increase its staff by hiring additional officers. With the hiring of additional officers when required, and implementation of GP Policies P-1.1, P-1.2, P-1.3, P-2.1, S-6.1, and S-6.2 this will be considered a *less than significant impact.*

(3) Impact PS-3

The Specific Plan may create additional utility service demands in excess of projected supply relative to water.

The Specific Plan will generate additional peak water demand. The *Urban Water Management Plan for the City of Merced* (Brown and Caldwell, 2005) concluded that although additional water supply, storage, and distribution facilities will be necessary to accommodate the additional water demand, the quality and supply of the existing groundwater is adequate over the next 20-year planning period. To meet this additional water demand and provide system reliability, the City plans to add several water wells to match the requirements of development.

A Water Supply Assessment (SB 610) was prepared for the project (Appendix G), which summarizes that future water supplies for the SMSP project area and cummulative development with the SUDP area would consist of groundwater pumping from the Merced groundwater Sub-basin. According the DWR the Merced Sub-basin is in a mild state of overdraft. However the City working jointly with MID and others have developed a groundwater management plan (GWMP) the goals and objecives of which include restoring and preserving groundwater at 1999 levels through a combination of actions previously described. The estimated water demand for the SMSP area was included in analyses conducted as a part of the 2005 UWMP, the 2001 Merced Water Supply Plan Update and the City of Merced, Specific Urban Development Plan analyses. With onging implementation of the recommendations in these Plans the City will be able to meet its future water demands and support the broader basin-wide objectives. Therefore, future water supplies would be adequate to meet the water demands of the SMSP area**.** *This impact can be fully mitigated through the adoption of certain mitigation measures presented hereafter*.

(4) Impact PS-4

The Specific Plan may create additional utility service demands in excess of projected supply relative to wastewater collection and disposal.

Buildout of the Specific Plan will generate additional wastewater. The City's wastewater treatment plant will exceed capacity with a population in excess of 77,000 and will be unable to handle additional wastewater without improvements. However, according to the *Final Environmental Impact Report: Wastewater Treatment Plant Expansion Project* (City of Merced, 2006a), the City proposes to install improvements to its wastewater treatment plant. This expansion will meet current and anticipated future water quality standards for the City of Merced's SUDP area and the UC Merced development.

The wastewater treatment plant is undergoing the construction of several facility upgrades, including tertiary filtration, UV disinfection, effluent re-aeration, and solids dewatering and stabilization. These facility upgrades, combined with expanded treatment capacity, will enable the City's wastewater treatment plant to serve planned population growth throughout the SUDP and UC Merced development. Full development of the SUDP and UC Merced areas is expected to produce 17.1 mgd (year 2025) and 2.25 mgd, respectively. The revised capacity of the treatment plant will serve a population of 150,000. With the implementation of GP Policies P-1.1, P-1.2, P-1.3, P-3.2.e, P 4-1.1, and P-4.2, and the provision of new service capacity, impacts from the proposed Specific Plan on wastewater facilities are considered *less than significant*.

(5) Impact PS-5

The Specific Plan may create additional utility service demands in excess of the projected supply relative to storm water drainage and flood control.

The Specific Plan will introduce paved areas and, thus, has the potential to result in increased storm water discharges. However, storm water drainage and flood control system construction is expected to occur concurrently with new development (Figure IVH-5). In accordance with Section 17.48 and 18.32.040 and enforced by the City Engineer, prior to approval of a tentative subdivision map, the applicant will demonstrate to the City that storm drainage facilities are adequate to meet Project demands and that improvements are consistent with the Merced County Critical Area Flooding and Drainage Plan and/or the City's Storm Drainage Master Plan.

Detention basins will be required to meet 10-year and 50-year storm events. These and other flood control facilities will be constructed in accordance with the City of Merced Engineering Department Design Standards, the *Merced County Critical Area Flooding and Drainage Plan* (MCAG, 1982) and its updates through the adoption of the *Merced Vision 2015 General Plan.* With implementation of GP Policies P-1.1, P-1.2, P-1.3, P-5.1, P-5.2, and SP Policy I-1.1, impacts are considered *less than significant*.

(6) Impact PS-6

The Specific Plan may create additional utility service demands in excess of projected supply relative to solid waste.

Development under the Specific Plan will generate additional solid waste from commercial and residential uses. Expansion of the SR 59 Landfill, which will include an additional 191 acres, will extend its lifespan an additional 30 years. With this expansion, the solid waste disposal services and landfill that will serve the Specific Plan have adequate capacity to accommodate the additional generated waste. The Billy Wright Landfill has, with limited expansion, a 14-year life expectancy. With implementation of GP Policies P-1.2, P-1.3, P-6.1 and P-6.2, the impact from increased solid waste generation will be considered a *less than significant* impact.

General governmental services and health care facilities will have to be expanded to accommodate project population growth attributed to the Specific Plan. Facility development will be part of the ongoing capital facility management strategy for the region. Through implementation of GP Policies P-8.2.b, P8.3.a, and P-8.3.d and SP OS-1.2 this will be a *less than significant impact.*

(10) Impact PS-10

The Specific Plan may conflict with adopted utility plans and goals for the City of Merced.

With implementation of GP Policies P-1.1, P-1.3.c, and P-8.3.d and SP I-1.1b, I-1.1.c, and I-1.1d, the potential for adverse impacts on utilities resulting from the Specific Plan is considered *less than significant.*

(11) Impact PS-11

Implementation of the Specific Plan will fail to provide adequate sites for the development of needed public recreation facilities, such as parks and playgrounds.

Development of the Specific Plan will accommodate several recreational amenities, including potential school sites that can include playing fields, off street bicycle paths (see Figure IVH-6), and passive open space areas. The bikeways that exist within the Specific Plan Area include a Class I bike path that runs near the southern limits of the planning area.

Implementation of the Specific Plan will generate demand for park land. An additional 5,889 dwelling units may be developed under this plan. To offset some of this demand, the Specific Plan designates 74 acres of land for recreational uses. The population generated by the Specific Plan buildout will add an additional 18,020 people to the City, which will impact the City's ability to meet its goal of 5 acres of park land per 1,000 residents. To meet the City goals for recreational amenities within the Specific Plan area, the project will have to include 90 total acres of park land. The Specific Plan includes GP Policies P-5.2b, P-8.2.d, and P-8.2.e and SP OS-1.1, OS-1.2 and OS-1.3, which will help alleviate some of this impact. It will be considered a *significant impact that can be mitigated*.

f. Significant Cumulative Impacts

(1) Fire Protection

Build-out of the Specific Plan will increase demands on fire protection services by adding residents. Without increases in staffing and facilities correlating to these population increases, potentially significant impacts could occur. The Specific Plan will contribute incrementally to this impact. The fire coverage area of three existing fire stations currently overlap most of the planning area. It is anticipated that existing fire services will be enhanced to accommodate cumulative demand as long as the City requires participation from new development to help cover a portion of the costs associated with providing additional fire protection. Therefore, cumulative impacts will be considered *less than significant.*

(2) Police Services

Cumulative buildout of the area will increase demands on police protection services by adding residents. Potentially significant impacts can occur if increases in staffing and facilities do not occur concurrently with population increases. The Specific Plan will be developed to accommodate cumulative demand as long as the City requires participation from new development to help cover a portion of the costs associated with providing additional police services. Therefore, cumulative impacts will be considered *less than significant.*

(3) Water

Cumulative demands placed on the City's groundwater resources at buildout will not affect the City's ability to provide water but will be limited by the pumping capacities of existing wells. To meet the demand of an expanding population, the phased construction of additional groundwater wells will be required. The *Merced Vision 2015 GP EIR* (City of Merced, 1997b) projected that the total demand for water in Merced will be 60,000 acre feet per year in the year 2030. The 2005 Urban Water Management Plan (Brown and Caldwell, 2005) prepared for the City of Merced concluded that, although the Merced Sub-basin is in a mild overdraft condition, water supplies are sufficient to support the level of development that is expected to occur over the next 20-year planning period.

Requirements for irrigation are projected to decline as development occurs throughout the Merced area and as a result of changing crop patterns and increased costs of water. In 1990, irrigation water demand was estimated at 582,000 acre-feet. By the year 2030, this demand is estimated to decline to approximately 495,000 acre-feet.

Like all development projects, development projects in the Specific Plan area will be required to pay for the facilities and infrastructure necessary to meet expected demand. Developers in the South Merced area also will be required to pay for water connection fees aimed at improving the City's water system. Therefore, cumulative impacts will be considered *less than significant.*

(4) Wastewater Collection and Disposal

The permitted capacity of the City's wastewater treatment plant is 10 mgd. In 2005, the treatment plant was projected to treat 9 mgd (Brown and Caldwell, 2005), however actual use was 8.5 mgd.. The sewage treatment facility must be upgraded to expand the existing plant capacity to accommodate the City's buildout population, which will include the development of the South Merced area consistent with the Specific Plan.

The City of Merced (City) is proposing to upgrade and expand the capacity of its wastewater treatment plant (WWTP) facilities to accommodate planned wastewater loads generated within its Specific Urban Development Plan (SUDP) area and the adjacent University of California Merced Long Range Development Plan (LRDP) area, and to comply with current and anticipated effluent quality regulatory limits. The Wastewater Treatment Plant Expansion Project (Project) would initially increase the capacity of the WWTP from the currently permitted 10 million gallons per day (mgd) to 11.5 mgd without any substantive improvements to the treatment

facilities. Following this initial upgrade a series of improvements would be made to the WWTP enabling the capacity of the treatment system to be rated at either 12 or 16 mgd by adding a series of tertiary-treatment facility improvements. Ultimately, the Project would reach a capacity of 20 mgd with additional improvements as needed to meet future wastewater loads.

The City has completed engineering studies (ECO:LOGIC, 2005) finding that the WWTP can achieve a treatment capacity of 11.5 mgd if an additional blowers is installed. This project is currently underway and planned to be completed in late 2006 to provide redundancy for the existing 10 mgd capacity. The 11.5 mgd of secondary treatment capacity would be available immediately upon issuance of a new NPDES permit and after certification of the EIR for the wastewater treatment plant.

In addition to constructing necessary treatment process upgrades, the City will also expand the treatment capacity to served planned population growth and development in the City Specific Urban Development Plan (SUDP) area and adjacent UC-Merced Campus Long-Range Development Plan (LRDP) area. Full development of the SUDP is expected to increase wastewater flow to 17.1 mgd by about 2025. Development of the UC-Merced LRDP would generate about 2.25 mgd. The combined wastewater volume to be generated from planned land uses within the SUDP and UC-Merced campus planning area equals about 19.35 mgd.

The City is currently assessing the number of new sewer connections that would be established in the immediate future to determine the size of the first WWTP expansion increment beyond 11.5 mgd. If the City continues to experience high growth rates, it will expand WWTP facilities in a single phase from 11.5 to 16 mgd. A subsequent expansion phase from 16 to 20 mgd would be implemented in response to longer-term future growth. If it is concluded that the City will grow at a slower rate, it may elect to limit the first phase of the WWTP Expansion Project to 12 mgd, followed by subsequent 16 mgd and 20 mgd capacity phases.

Thus, with implementation of required improvements, cumulative impacts pertaining to wastewater are anticipated to be *less than significant*.

(5) Storm Water Drainage and Flood Control

Development within the City will have the potential to result in an increase in impervious surface area, thereby increasing peak storm runoff in the area. The proposed project may incrementally contribute to this increase. A program-level analysis and hydrology study will have to be performed for each development to evaluate potential increases in runoff and to evaluate existing drainage facilities.

New development also will be required to install detention basins designed for 10-year and 50-year storm events, which will reduce peak storm flows. Moreover, all development proposals will be required to upgrade stormwater infrastructure as needed. Thus, with implementation of required improvements, cumulative impacts pertaining to drainage and flooding are anticipated to be *less than significant*.

(6) Solid Waste

Cumulative buildout of the area will increase solid waste generation, thereby reducing the lifespan of landfills serving the area. Implementation of the Specific Plan will contribute incrementally to the cumulative impact to landfill capacity. However, cumulative development in the area will not be sufficient to require additional planned expansion of existing facilities. Therefore, the contribution of the Specific Plan to cumulative solid waste impacts will be *less than significant*.

(7) Schools

Development of the proposed Specific Plan, in combination with other cumulative projects in the City of Merced area, will have a cumulative impact on the three school districts that serve the City of Merced through increased student generation. However, these potential cumulative impacts can be mitigated through payment of development fees for the construction of additional school facilities under SB 50, which is deemed to be full and complete mitigation of development-related impacts on schools. Therefore, cumulative impacts will be considered *less than significant.*

(8) Library Services and Cultural Facilities

Cumulative buildout of the area will increase public demand for library and cultural facilities, thereby limiting the available resources to which residents will have access. Without the expansion of revenue sources at the County level to support these services, a general deterioration of library services and cultural facilities may result in a *significant impact that can be mitigated*.

(9) Other Public Services and Facilities

Countywide, population growth will increase the demand on governmental and medical services and facilities. Cumulative impact will affect all levels of public services and facilities, given their limited budget availability. Funding sources for these public services will have to be expanded to allow for continued operation at optimal levels of service. Thus, with implementation of additional funding mechanisms, cumulative impacts to public services and facilities will be *less than significant*.

(10) Utilities

Without the expansion of additional utilities, and revenue sources to provide for them, the cumulative impact of the Specific Plan on existing utilities can strain services and result in an overall decline in services. However, with the implementation and collection of developer impact fees to fund the construction of expanded utilities, this impact is considered *less than significant*.

(11) Recreation

When the existing 345 acres of recreational land in the City are combined with 74 acres of recreational land from the Specific Plan area, there will be a total of 419 acres of recreational

open space within the City. The expanded population will create greater demand for recreation and open space throughout the region; thus, cumulative impacts associated with the Specific Plan will be considered *significant impacts that can be mitigated* with the measures described hereafter.

3. MITIGATION MEASURES ADOPTED TO MINIMIZE SIGNIFICANT EFFECTS

The following information is provided in accordance with Section 15126.4 of the CEQA Guidelines.

a. Measures that Mitigate Direct Impacts

The following mitigation measures will be incorporated into the project.

(1) Mitigation PS-1

All properties within the Specific Plan area will participate in a Community Facilities Services District consistent with expectations of the *Merced Vision 2015 General Plan.* Additionally, payment of public facility impact fees will be required to compensate for the impacts to capital projects. As a condition of development, applicants pursuant to the Specific Plan will be required to pay this fee at the time building permits are issued.

(2) Mitigation PS-2

Additional officers will be hired as required, and all development within the Specific Plan area will participate in a Community Facilities District to fund a portion of these additional costs. As a condition of development, applicants pursuant to the Specific Plan will be required to pay this fee at the time building permits are issued. This impact will be *less than significant* with the above-referenced mitigation measure.

(3) Mitigation PS-3

Implementation of General Plan Policies P-1.1, P-1.2, P-1.3, P-2.1.e, P-3.1, and P-3.2 and SP S-4.2.a will assist in accommodating the additional water demand. The City will construct wells as needed using funds provided for through developer payment of Public Facility Finance Payments.

(4) Mitigation PS-4

With implementation of GP Policies P-1.1, P-1.2, P-1.3, P-3.2.e, P 4-1.1, and P-4.2, and providing new service capacity to 20 mgd, impacts from the proposed Specific Plan on wastewater facilities are considered *less than significant*.

(5) Mitigation PS-5

With implementation of GP Policies P-1.1, P-1.2, P-1.3, P-5.1, and P-5.2 and SP Policy I-1.1, impacts associated with increased storm water discharges are considered *less than significant*.

(6) Mitigation PS-6

With implementation of GP Policies P-1.2, P-1.3, P-6.1 and P-6.2, the impact from increased solid waste generation will be considered a *less than significant impact*.

(7) Mitigation PS-7

Mitigation of the need for school facilities in land-use approvals is limited by the California Legislature to the payment of mitigation fees under Government Code Sections 65995, 65995.5 or 65995.7, as applicable, and the payment of such fees is deemed *full and complete mitigation* of the impacts of any local agency action involving the planning, use, or development of real property.

(8) Mitigation PS-8

With implementation of GP Policies P-1.1, P-1.3, P-8.1, P-8.2, and P-8.3 and SP Policy OS-1.3, impacts to libraries and cultural services will be considered *less than significant*.

(9) Mitigation PS-9

Through implementation of GP Policies P-8.2.b, P8.3.a, and P-8.3.d and SP Policy OS-1.2 impacts associated with the Specific Plan on hospitals and other health care facilities will be *less than significant.*

(10) Mitigation PS-10

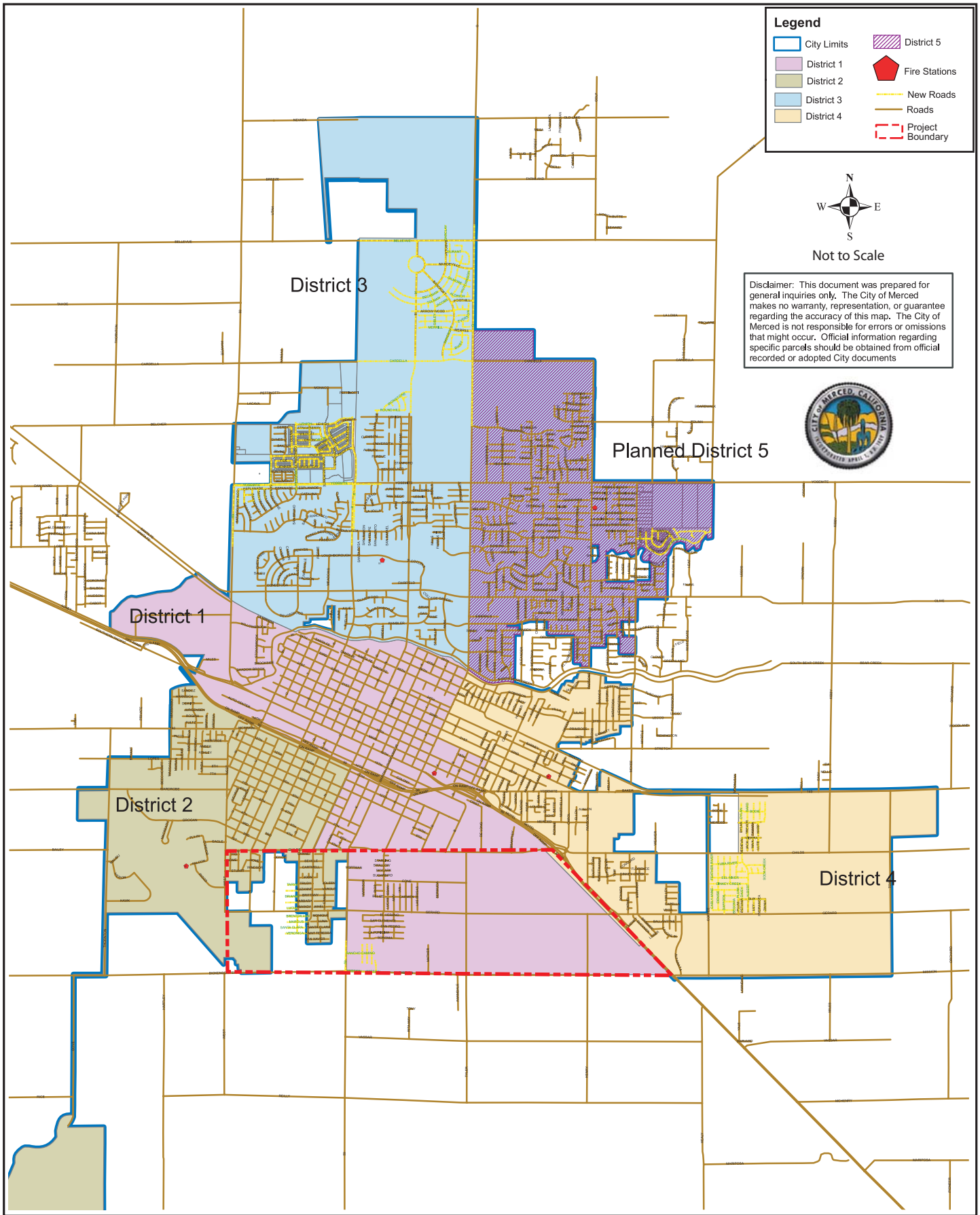
With implementation of GP Policies P-1.1, P-1.3.c, and P-8.3.d and SP Policies I-1.1b, I-1.1.c, and I-1.1d, the potential for adverse impacts on utilities resulting from the Specific Plan is considered *less than significant.*

(11) Mitigation PS-11

Provisions will be made for locating and funding the construction of recreational facilities within the Specific Plan area to meet the City's goal of 5 acres per thousand residents. The City will have final approval of the design and location of proposed recreational areas. Payment of public facility fees will be required to compensate the City for impacts on recreational uses. As a condition of development, applicants pursuant to the Specific Plan will be required to pay this fee at the time building permits are issued.

b. Measures that Mitigate Cumulative Impacts

Implementation of the above-mentioned mitigation measures and policies will reduce any cumulative impacts to less than significant levels; therefore, potential cumulative impacts from implementation of the Specific Plan are expected to be fully mitigated. No additional mitigation measures are proposed.



CITY OF MERCED FIRE STATIONS AND DISTRICT LOCATIONS

Project No.: 17325731	Date: December 2006	Project: SOUTH MERCED SPECIFIC PLAN AREA	Figure IVH-1

K:southmerced/FIG VIH-1.ai

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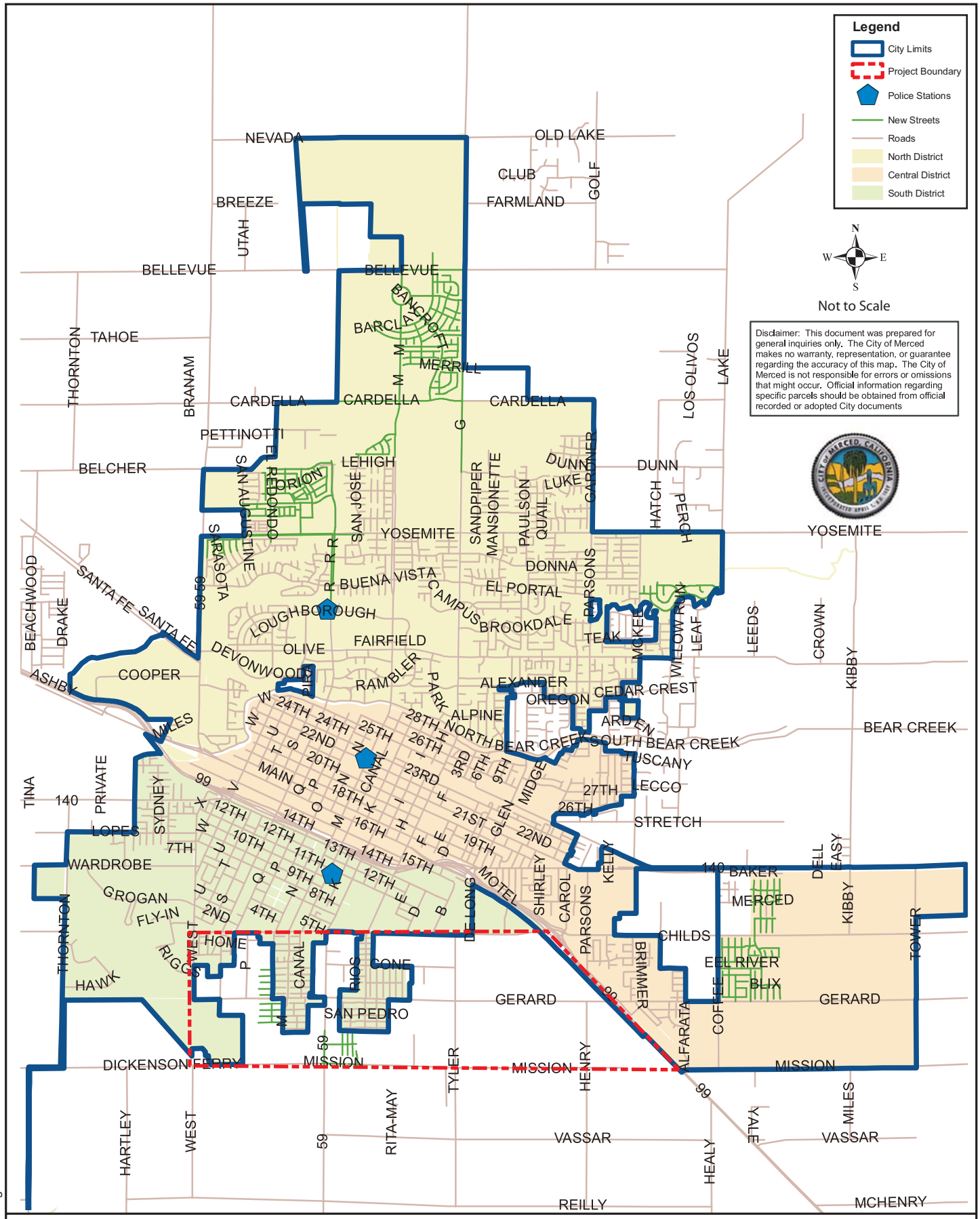

CITY OF MERCED POLICE STATIONS AND DISTRICT LOCATIONS

Project No.: 17325731	Date: DECEMBER 2006	Project: SOUTH MERCED SPECIFIC PLAN AREA	Figure IVH-2

K:Southmerced/fig IVH2.ai

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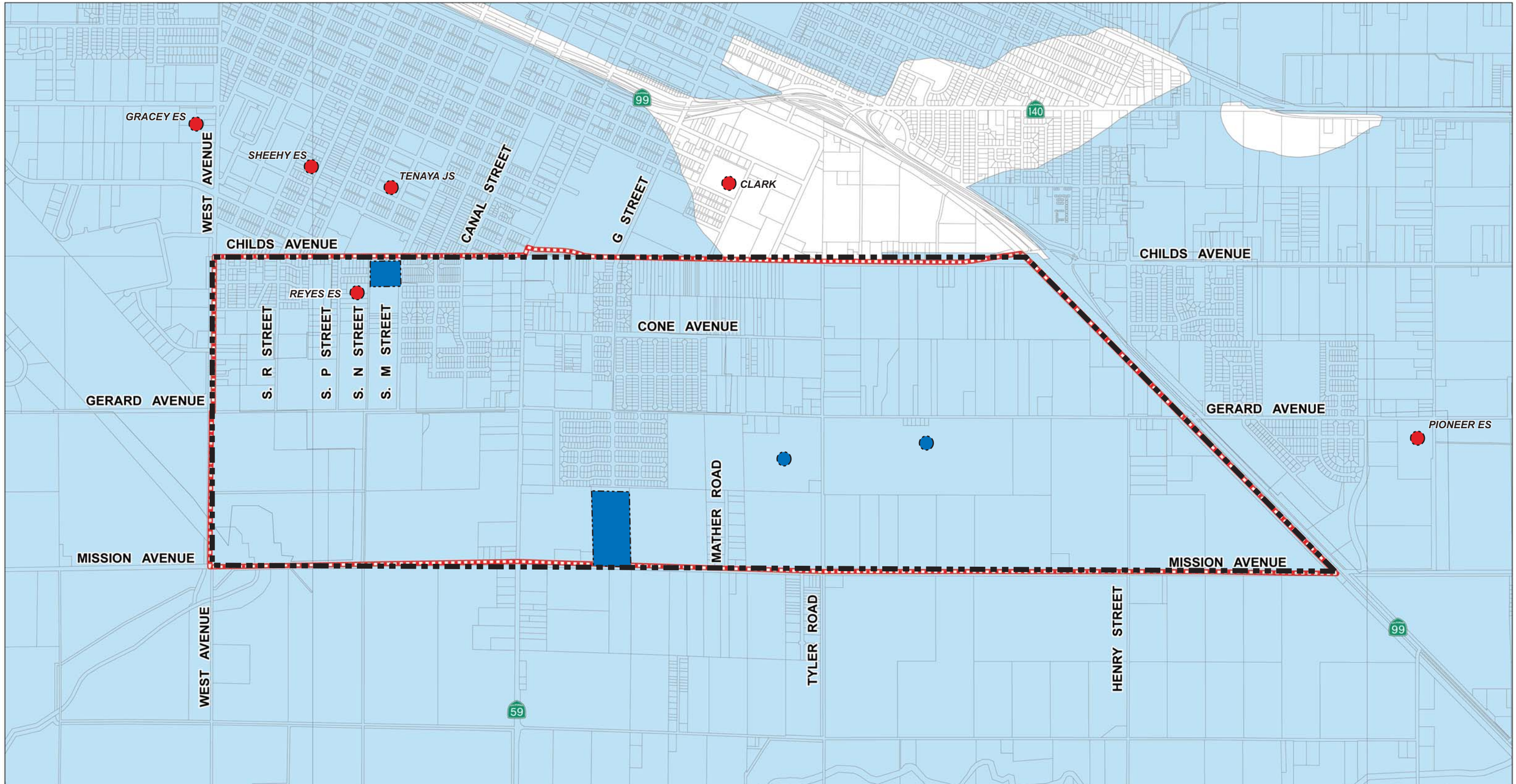

SOUTH MERCED SPECIFIC PLAN - FLOODPLAIN MAP

Figure IVH-3

Prepared map by permission of the City of Merced. 2005.

URS

December 18, 2006

LEGEND

SOUTH MERCED SPECIFIC PLAN

A - 100 YEAR FLOODPLAIN

PARCELS

Note: A 100-Year Floodplain represents 1% annual chance for a flood event to occure in a determined area and is deemed to be an aproximation. A detailed engineering survey would be required along with an Elevation Certificate in order to remove a site from a determined flood aone.

Source: FEMA Q3 Dataset, Merced County
Secondary Source - GeoCommunity Data Portal
Source date unknown.
** Recommend data validation through FEMA DFIRM*
Community: 0188
FIRM Panel: 06847 C 0440 E

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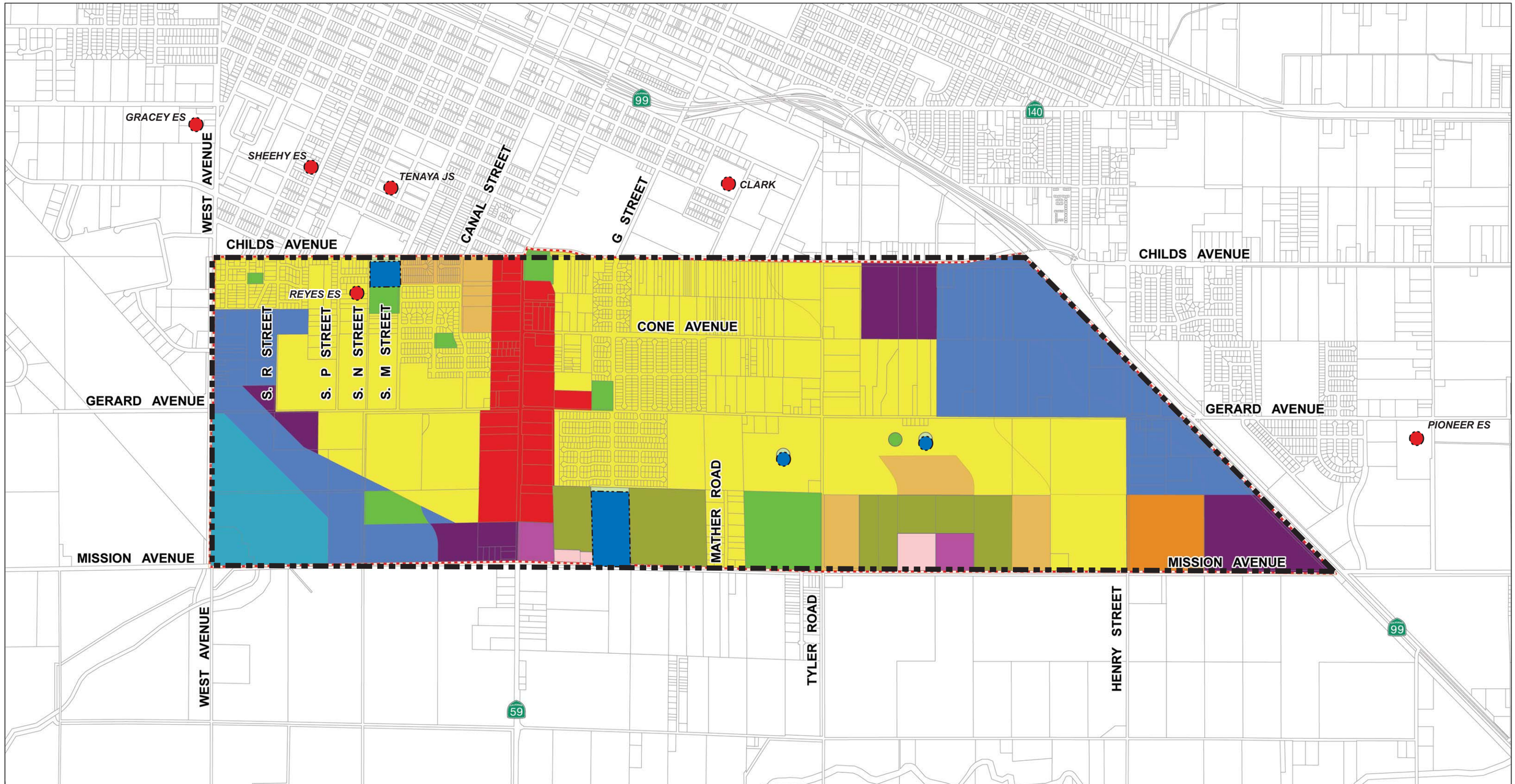


SOUTH MERCED SPECIFIC PLAN - EXISTING AND PROPOSED SCHOOLS

Figure IVH-4

Prepared map by permission of the City of Merced. 2005.

URS

December 11, 2006

LEGEND

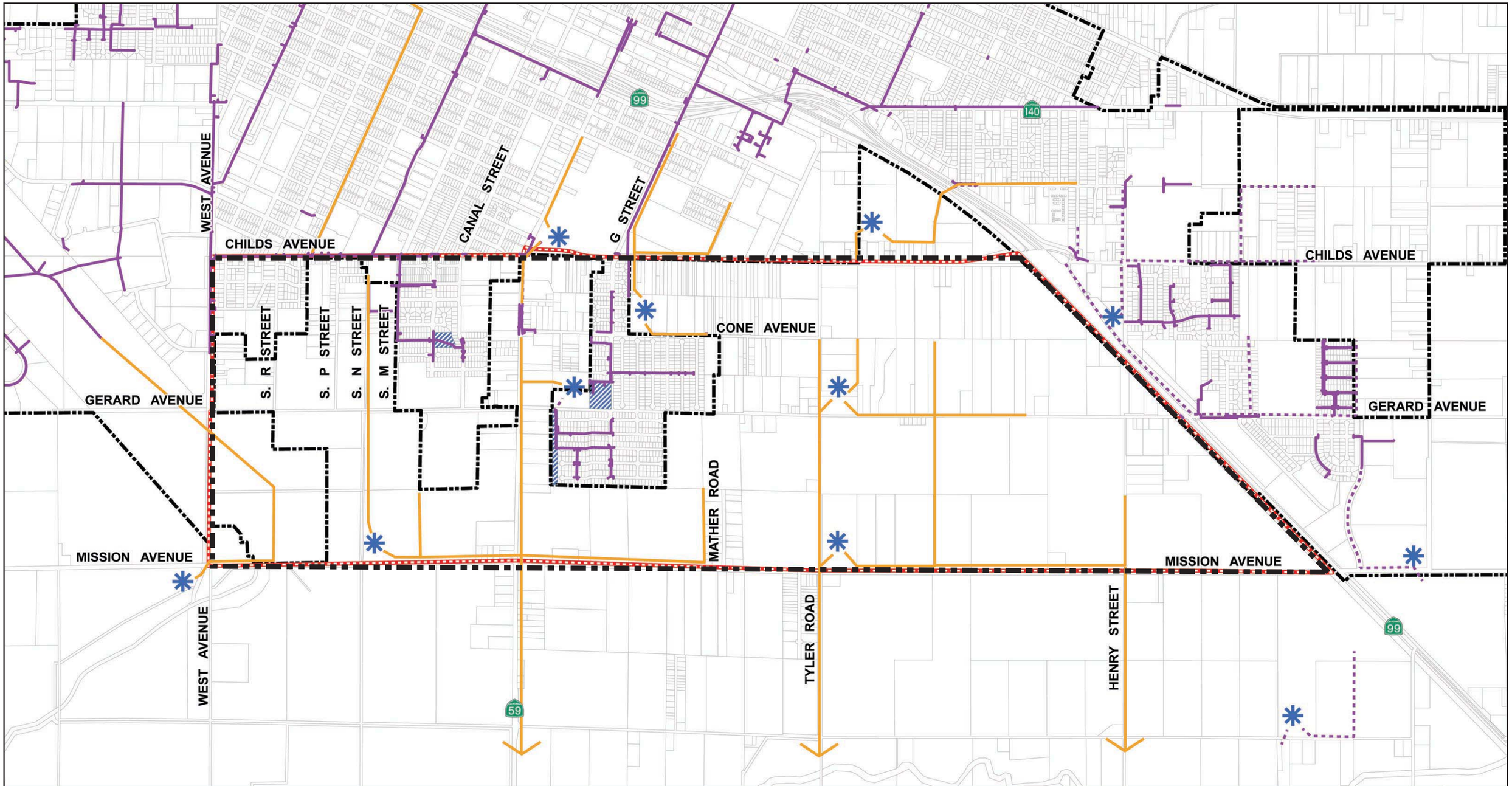
SOUTH MERCED SPECIFIC PLAN

LDR, MDR, VR, CN, COM, CR, OFF, BP, IND, AG, SCH, PRK

Floating School, Floating Park, Proposed Schools, Existing Schools, Specific Plan Area

N, W, E, S

0 800 1,600 Feet



SOUTH MERCED SPECIFIC PLAN - STORMWATER FACILITIES CONCEPT

Figure IVH-5

Prepared map by permission of the City of Merced. 2005.

URS

LEGEND

- SOUTH MERCED SPECIFIC PLAN
- MERCED CITY LIMITS
- PARCELS
- Storm Drains
- Storm Drains - Proposed
- Existing Detention Basins
- Proposed Detention Basins

Note: All Detension Basins include a Pump Station.

Source: Storm Drain Master Plan, City of Merced, 2002.

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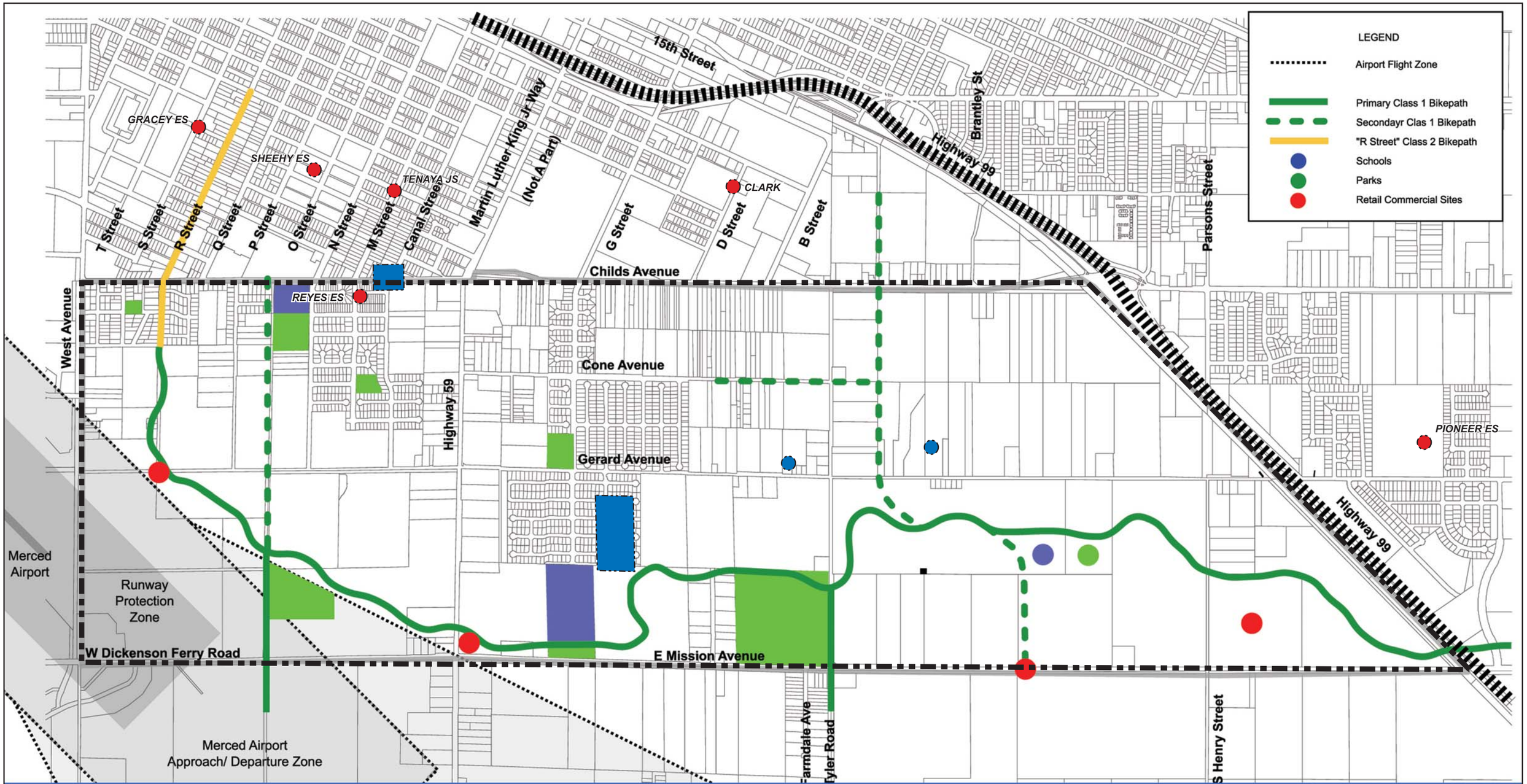

SOUTH MERCED SPECIFIC PLAN - OFF-STREET BICYCLE PATH CONCEPT

Figure IVH-6

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Not To Scale

I. AGRICULTURAL RESOURCES

This section describes how development associated with the South Merced Specific Plan will affect agricultural resources. Where significant effects are identified, mitigation measures are provided to reduce those impacts to the extent feasible.

1. ENVIRONMENTAL SETTING

The following information is provided in accordance with Section 15125 of the CEQA Guidelines. The environmental setting used for the South Merced Specific Plan and for determining the significance of impacts is based on review of the *Merced Vision 2015 General Plan* (City of Merced, 1997a) and its Program EIR (City of Merced, 1997b). Both documents are available for review at the City of Merced.

a. Study Area for Direct Impacts

The South Merced Specific Plan study area comprises 2,052 acres and is bounded on the north by Childs Avenue, by SR 99 on the east, by Mission Avenue/Dickenson Ferry Road on the south, and by West Avenue and the Merced Airport on the west. The study area for direct agricultural resource impacts encompasses the entire Specific Plan area (see Figure IVI-1, Merced County Agricultural). This area was selected as the study area since it contains active agricultural land that is proposed for development.

b. Surrounding Area

The area to the west and south of the Specific Plan is primarily farmland and designated on the County General Plan as A-1-General Agriculture (Merced County, 1990). The area north and east of the planning area is mapped as City Plan Area and is developed for urban uses.

c. Study Area for Cumulative Impacts

Merced County will be the study area for cumulative agricultural resources impacts. This area was selected as the study area because of the policies adopted by Merced County addressing agricultural preservation.

d. Methods

The analysis of agricultural impacts is based on a review of the *Merced Vision 2015 General Plan*, the Vision 2015 GP EIR, its technical appendices, and the *South Merced Specific Plan* (City of Merced, 2006b) to identify where future development under the proposed Specific Plan may create conflicts with ongoing agricultural productivity. Mapping from the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) files for farmland classification also has been reviewed as part of this effort.

e. Existing Physical Conditions in the Study Area

Surrounding land uses for the Specific Plan area include single-family residential and commercial uses to the north, SR 99 to the east, agricultural and vacant land to the south, and single-family residences, industrial uses, and the Merced Municipal Airport to the west.

Merced County is among the top agriculture-producing counties in the State of California. In 2005, Merced County surpassed $2 billion dollars in gross production value of agricultural commodities for the second consecutive year (U.S. Department of Agriculture, 2005). According to Maxwell Norton, *"Challenges Facing California Agriculture's Role in California's Economy"* (Norton, 2001), the Mediterranean type of climate found in California's Central Valley lends itself to its "number and variety of crops produced [being] probably greater than any other region in the world."

Agricultural soil resources and crop production were evaluated in the Merced Vision 2015 GP EIR. The GP EIR inventoried existing (1995) agricultural lands for the Merced SUDP area. According to the data in that EIR, a total of 12,144 acres of agriculturally used land lies within the proposed SUDP area. Agriculturally used (or vacant) land represented approximately 59.1% of the City's expanded SUDP area in 1995.

Field surveys and a review of aerial photography conducted in 1995 indicate that the agricultural cropland in the SUDP is primarily irrigated and non-irrigated pasture and field crop. Approximately 35.8% of the agricultural land identified in the SUDP is south of the built-up portions of the City.

f. Project Design Elements that Avoid Agricultural Resources Impacts

Although the Specific Plan area will be mostly developed as a result of the implementation of the Specific Plan, there are provisions for areas where agricultural resources will be preserved and protected. For example, the Specific Plan agricultural land-use designation comprises 86 gross acres (65 net acres). It is located in what is identified as the Merced Airport Runway Protection Zone, in the far southwestern corner of the Specific Plan area.

According to the *Merced County Year 2000 General Plan* (Merced County, 1990), the (development) goal is to "provide for intensive urban development and to protect agricultural and open space land from uncontrolled sprawling urban development." The *Merced Vision 2015 General Plan* adopted this goal and created policies that are designed to minimize or avoid agricultural resources by concentrating development away from agricultural operations. These policies are described hereafter.

g. Adopted Policies and Regulations that Avoid Agricultural Resources Impacts

The following polices found in the *Merced Vision 2015 General Plan* are designed to minimize agricultural resources impacts.

- GP Policy UE-1.1 Designate areas for new urban development that recognize the physical characteristics and environmental constraints of the planning area.

- GP 1.1.a Direct development away from significant concentrations of "Prime" agricultural soils and give priority to the conversion of non-prime agricultural land if reasonable alternatives exist.
- GP 1.1.b Limit development and development related impacts on agricultural lands along City's urban fringe.
- GP 1.1.e Explore techniques to preserve areas of significant agricultural soils, aircraft noise and safety zones, buffers between cities, scenic areas, etc., from incompatible urban development.

- GP Policy UE-1.2 Promote a compact urban form.
  - GP 1.2.d Promote higher residential densities with the Merced urban area.
- GP Policy OS-2.1 Protect agricultural areas outside the City's Specific Urban Development Plans (SUDP) from urban impacts.
  - GP 2.1.a Explore the use of Farmland Trusts, exclusive agricultural zoning, and the transfer of development rights to protect agricultural areas.
  - GP 2.1.b Establish policies and programs which minimize conflicts between urban and agricultural uses.
  - 2.1.c Minimize conflict between agricultural and urban uses by requiring buffers, such as landscape areas, roadways or creeks to separate these uses.
- GP Policy OS-2.2 Relieve pressures on converting areas containing large concentrations of "prime" agricultural soils to urban uses by providing adequate urban development land within Merced City SUDP.
- GP Policy OS-5.2 Protect soil resources from the erosive forces of wind and water.
  - 5.2.a Reduce soil erosion potential for new development.
  - 5.2.b Encourage the planting of trees as windbreaks in agricultural areas in the community.
  - 5.2.c Maintain adequate vegetation along the banks of urban streams and storm water drainage channels.
- GP Policy S-5.1 Continue to protect approach areas and control zones for both existing and future runway systems through land use regulations and property acquisition where necessary.
  - 5.1.a Retain existing agricultural land uses and discourage residential land use designations within the Merced Municipal Airport referral area.

- 5.1.b Limit industrial/commercial uses to those with peak occupancy levels of 25 persons/acre or less within Zone 2 of the Merced Municipal Airport referral area.

2. CONSIDERATION AND DISCUSSION OF SIGNIFICANT ENVIRONMENTAL IMPACTS

The following information is provided in accordance with Section 15126.2 of the CEQA Guidelines and the local City of Merced adopted thresholds of significance, specified in the Merced Vision 2015 GP EIR (City of Merced, 1997b). The local thresholds are in addition to those required pursuant to CEQA.

a. Environmental Considerations Suggested in CEQA

Appendix G of the CEQA Guidelines suggests that a development project could have a significant impact on agricultural resources, if the project would:

1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use;

2. Conflict with existing zoning for agricultural use, or a Williamson Act contract; and/or

3. Involve other changes in the existing environment, which due to their location or nature, could individually or cumulatively result in the loss of Farmland to non-agricultural use.

b. Rationale for Establishing Local Thresholds

Consistent with CEQA Guidelines, the City of Merced, through the adoption of the *Merced Vision 2015 GP EIR*, adopted several thresholds of significance that are used in determining the Specific Plan's impact on agricultural resources. Adoption of these thresholds allows the City of Merced to provide standards of significance in addition to those provided solely by CEQA. These thresholds are described in detail hereafter.

c. Thresholds of Significance Adopted in this EIR

The City of Merced, as the Lead Agency, has adopted the following as thresholds of significance, consistent with CEQA Guidelines, and has determined that potential significant impacts related to agricultural resources will result if:

1. The Specific Plan would result in the conversion of economically viable concentrations of prime agricultural land to non-agricultural use.

2. The Specific Plan would impair the agricultural productivity of prime agricultural land in the region.

3. The Specific Plan would conflict with adopted agricultural resource plans and goals of Merced.

d. Regulatory Setting

(1) Land Conservation Act

An *Agricultural Preserve* was established by Merced County for areas devoted to agricultural and open-space uses per the Williamson Act. Establishment of this *Agricultural Preserve* is a prerequisite for landowners to enter into land conservation contracts with Merced County (see discussion below). Approximately 173 acres of land within the Specific Plan area is currently within the Merced County Agricultural Preserve. Through subsequent annexations and prezoning of these sites for urban uses, these lands will be removed the Merced County Agricultural Preserve.

Preservation of agricultural, recreational and open space lands through agricultural preserve contracts between the County and property owners is a technique encouraged by the state for implementing the General Plan. Agricultural preserve contracts are executed through procedures enabled by the California Land Conservation Act of 1965, also known as the Williamson Act. A contract may be entered into for a property with agricultural, recreational, and open space uses in return for lower property taxes. The inclusion of a parcel under the Williamson Act is entirely voluntary, and must have the consent of the property owner. No lands within the South Merced Specific Plan are under contract.

(2) Farmland Mapping and Monitoring Program

The FMMP maps, monitors, and reports on farmland, grazing land and urban built-up areas in 45 counties throughout California. The program places land into nine categories ranging from “prime” to “land committed to nonagricultural use.”

(3) Merced County Local Agency Formation Commission

Urban growth and expansion under California law is subject to a local review body called the Merced County Local Agency Formation Commission (LAFCo). This body comprises city and county elected officials who must review and approve all municipal boundary revisions (annexations). The Merced Vision 2015 GP EIR documents a set of goals, objectives, and policies adopted in 1994 by the Merced County LAFCo to address local concerns and priorities regarding annexations and the preservation of agricultural land (p 4.6.8).

(4) City of Merced General Plan

The City of Merced, through the adoption of its General Plan, established general planning policies that address the loss and preservation of existing agricultural land. Specifically, the General Plan Policies discussed in 1G above were designed to address concerns regarding the loss and preservation of agricultural land within the City of Merced.

e. Significant Project Impacts

The Merced Vision 2015 GP EIR contains an analysis of agricultural resources impacts for the General Plan area, which includes the Specific Plan area. The GP EIR concluded that the expansion of the City's urban area will result in the loss of agricultural land for the region, which is considered a significant impact that cannot be mitigated. A Statement of Overriding Considerations was adopted, together with the adoption of the *Merced Vision 2015 General Plan*, which found that, though "significant" adverse impacts are likely to result from the implementation of the *Merced Vision 2015 General Plan*, there are social, environmental, and economic merits of the project that will more than balance the adverse environmental effects. Therefore, agricultural impacts associated with the loss of agricultural land are adequately addressed in the General Plan EIR. No further evaluation is necessary.

(1) Impact AG-1

Implementation of the Specific Plan will not result in the conversion of additional prime agricultural land to non-agricultural uses that were not previously identified in the *Merced Vision 2015 General Plan*. That General Plan identified the prime agricultural land of the Specific Plan and addressed the potential impact of the loss of these lands. This impact is *less than significant.*

(2) Impact AG-2

Implementation of the Specific Plan will impair the productivity of prime agricultural land; however, this was identified in the Merced Vision 2015 GP EIR, and a Statement of Overriding Considerations was adopted for this impact. The proposed Specific Plan will not impact any additional prime agricultural lands that were identified in the GP EIR; therefore, impacts to agricultural resources are considered *less than significant.*

(3) Impact AG-3

Implementation of the Specific Plan will comply with adopted City policies, which include the promotion of compact urban development and the preservation of agricultural resources in identified areas. Specifically, incorporation of GP Policy OS-2.1.c, which "minimize[s] conflict between agricultural and urban uses by requiring buffers, such as landscape areas, roadways or creeks to separate these uses," will be implemented through the use of Mission Avenue, a 128-foot right of way for a future arterial street, as a buffer between residential development in the planning area and agricultural uses to the south. With the incorporation of adopted policies, impacts to agricultural resources are considered *less than significant.*

f. Significant Cumulative Impacts

Individual development projects in South Merced and within nearby unincorporated areas will have the potential to create compatibility conflicts. Such conflicts are expected to be addressed on a case-by-case basis and can be resolved through appropriate design and implementation of adopted policies. Cumulative impacts will be *less than significant*.

3. MITIGATION MEASURES ADOPTED TO MINIMIZE SIGNIFICANT EFFECTS

The following information is provided in accordance with Section 15126.4 of the CEQA Guidelines.

a. Measures that Mitigate Direct Impacts

Several goals and policies identified in the *Merced Vision 2015 General Plan*, as discussed in 1G above, will be incorporated into the Specific Plan to further minimize impacts on agricultural resources. With the incorporation of these policies and the Statement of Overriding Considerations adopted in conjunction with the approval of the Merced Vision 2015 GP EIR, no additional mitigation measures are required.

b. Measures that Mitigate Cumulative Impacts

On the basis of the analysis performed in the Merced Vision 2015 GP EIR, it has been determined that the cumulative impact of converting “prime” agricultural soils to non-productive agricultural uses is a “significant” adverse impact under CEQA. No mitigation is available to address this impact.

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SOUTH MERCED SPECIFIC PLAN - MERCED AGRICULTURAL PRESERVE

Figure IVI-1

Prepared map by permission of the City of Merced. 2005.

URS

May 16, 2006

LEGEND

SOUTH MERCED SPECIFIC PLAN

PARCELS

WILLIAMSON ACT CONTRACTS

N
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0 800 1,600 Feet

J. GEOLOGY AND SOILS

This section describes how development associated with the South Merced Specific Plan will affect geology and soils resources. Where significant effects are identified, mitigation measures are provided to reduce those impacts to the extent feasible.

1. ENVIRONMENTAL SETTING

The following information is provided in accordance with Section 15125 of the CEQA Guidelines. The environmental setting used for the South Merced Specific Plan and for determining the significance of impacts is based on review of the *Merced Vision 2015 General Plan* (City of Merced, 1997a) and its Program EIR (City of Merced, 1997b). Both documents are available for review at the City of Merced.

a. Study Area for Direct Impacts

The study area for the evaluation of geology and soils resource impacts encompasses the Specific Plan study area. The South Merced Specific Plan study area comprises 2,052 acres and is bounded on the north by Childs Avenue, by SR 99 on the east, by Mission Avenue/Dickenson Ferry Road on the south, and by West Avenue and the Merced Airport on the west. This area was selected as the study area because impacts from development under the proposed Specific Plan related to geology and soils will be limited to this area.

b. Surrounding Area

The study area is at the base of the Sierra Nevada foothills, within the County of Merced, one of the richest agricultural regions in the United States. The northern portion of the City is characterized by gently rolling terrain, while the southern portion is generally flat. The area surrounding the City is used predominantly for agricultural production.

c. Study Area for Cumulative Impacts

The City of Merced will be the study area for cumulative geology and soils resources impacts. This area was selected as the study area because of the number of projects affecting geology and soils resources that cover the City.

d. Methods

Assessment of impacts is based on the review of site information and conditions, the review of environmental information for adjacent projects, and the review of the *South Merced Specific Plan* (City of Merced, 2006b) to identify where future development under the proposed Specific Plan may create conflict with identified geologic or soils hazards.

e. Existing Physical Conditions in the Study Area

According to the Agricultural Soil Inventory prepared for the Merced Vision 2015 GP EIR, the City of Merced is located within an area containing very important soils capable of producing a wide variety of agricultural products (Figure IVJ-1).

Specific Plan area soils generally consist of two soil types: the Wyman-Yokohl-Marguerite association and the Lewis-Landlow-Burchell association (Table IVJ-1). The Wyman-Yokohl-Marguerite Association contains soils that are well drained, with a medium to moderately fine texture that developed from alluvium derived from slate, schist, and metamorphosed sandstone. Wyman soils are found in very gently sloping to nearly level areas and have slightly more clay in the subsoil than in the surface soil. Most of the soils in this association are classified as prime. Yokohl soils are developed on nearly level to gently sloping terraces and alluvial fans. None of the Yokohl soils is considered prime.

TABLE IVJ-1

Soil Characteristics of the Specific Plan Area

Soil Unit Name and Characteristics (Mapping Symbol)	Acres in Study Area	Prime Soil
Burchell silt loam, slightly saline-alkali (BkA), 0 to 1 percent slopes	10.3	Yes
Burchell silty clay loam, slightly saline-alkali (BpA), 0 to 1 percent slopes	12.6	Yes
Burchell silty clay loam, moderately saline-alkali (BrA), 0 to 1 percent slopes	30.0	Yes
Landlow silty clay loam, slightly saline-alkali (LeA), 0 to 1 percent slopes	133.4	No
Landlow silty clay loam, slightly alkali (LfA), 0 to 1 percent slopes	144.3	No
Lewis silty clay loam, slightly saline-alkali (LoA), 0 to 1 percent slopes	17.4	No
Wyman clay loam, deep over hardpan (WnA), 0 to 1 percent slopes	631.6	Yes
Wyman clay loam (WoA), 0 to 3 percent slopes	28.7	Yes
Yokohl clay loam (YbA), 0 to 3 percent slopes	1,394.8	No
TOTAL ACRES (Total acreage exceeds the 2,052-acre Specific Plan area because it includes a small portion of land east of the planning area)	2403.10	N/A

Source: City of Merced, 1995.

The remaining soils found within the Specific Plan area are characterized as poorly drained saline-alkali soils belonging to the Lewis-Landlow-Burchell association. These soils are derived from a medium textured to moderately fine textured alluvium that developed from granite and metamorphosed sedimentary rock. This soil association's poor ability to drain, and the accompanying high water table, assist in keeping the soil moist, which lends itself to a heavy growth of naturally occurring grasses and rushes. According to the *Merced Vision 2015 General Plan*, the Burchell Soils are the only "prime" soil in this association. The aluminum based Burchell soils are derived from igneous rocks, but also from slate and metasandstone. These soils occur in "slight depressions or nearly flat basins south of the City of Merced" (City of Merced, 1997a, p. 8-35).

Similar to much of California, the South Merced Specific Plan area is located within a seismically active region. The City of Merced's General Plan illustrates several potentially active faults in the vicinity of the Specific Plan area (City of Merced, 1997a, p. 11-40). The closest mapped faults are the Bear Mountain fault, which runs under Lake McClure, and the Ortigalita fault, which runs under the San Luis Reservoir. Both faults are approximately 42 and 38 miles away, respectively. The nearest fault of historical significance is the San Andreas fault, which is located 58 miles to the west.

Although no areas with the potential for liquefaction were identified at the time the *Merced Vision 2015 General Plan* was prepared, the potential of liquefaction is recognized because of the presence of unconsolidated materials and a high water table coinciding in many areas (City of Merced, 1997a). Historical subsiding has occurred to the east of Merced in the vicinity of Los Baños. At the time the City of Merced's General Plan was prepared, a newly discovered area near El Nido, east of the San Joaquin River, was found. According to the General Plan, no "subsidence has occurred in the Merced planning area or has accompanied [their] groundwater withdrawal…" (City of Merced, 1997a, p. 11-15).

f. Project Design Elements that Avoid Geology and Soils Resources Impacts

Although the Specific Plan area will be mostly developed as a result of the implementation of the Specific Plan, there are provisions for open space corridors and areas where geology and soils resources will be preserved and protected.

g. Adopted Policies and Regulations that Avoid Geology and Soils Resources Impacts

The following polices found in the *Merced Vision 2015 General Plan* are designed to minimize geology and soils resources impacts.

(1) GP Policy S-2.1: Reduce the potential danger from earthquake and seismic-related activity from existing buildings where necessary.

- GP 2.1.a Evaluate the need for and the cost of setting up an enforcement program for eliminating any unreasonable risk associated with seismically unsafe buildings through reinforcement or removal where necessary.
- GP 2.1.b Study the possibility of obtaining State Historic Preservation, Community Development Block Grant, Redevelopment, or other available money to assist with repairs of unsafe buildings.
- GP 2.1.c Continue to require that new development meet the standards of Seismic Zone 3.
- GP 2.1.d Pursue uniform infrastructure, building, and land use requirements and policies regarding disaster avoidance within the City's SUDP boundaries.
- GP 2.1.e Review all possible new additions to the City's Building and Fire Codes based on up-to-date technology every three years.

- GP 2.1.f Develop mitigation plans for each of the buildings identified in the Building Division's 1990 Seismic Evaluation of Downtown Merced as "immediate hazards."
- GP 2.1.g Continue to implement the 1993 State law requiring seismic retrofitting of existing buildings when there is a change of use, additions, or remodeling that affects unreinforced masonry portions of the structure.

(2) GP Policy S-2.3: Restrict urban development in all areas with potential ground failure characteristics.

- GP 2.3.a Investigate the feasibility of performing an inventory of areas with generally unstable ground within the SUDP area and work with the County to restrict or prohibit their development. In the Merced planning area, most of the unstable ground are in old streambeds, near embankments and adjacent to streams with sufficient velocities to erode the bank.
- GP 2.3.b Retain a high level of groundwater supply in order to reduce the possibility of land subsidence, including the initiation of an educational program to discourage excessive, inefficient uses of water.

2. CONSIDERATION AND DISCUSSION OF SIGNIFICANT ENVIRONMENTAL IMPACTS

The following information is provided in accordance with Section 15126.2 of the CEQA Guidelines and the local City of Merced's adopted thresholds of significance specified in the Vision 2015 GP EIR. The local thresholds are in addition to those required pursuant to CEQA.

a. Environmental Considerations Suggested in CEQA

Appendix G of the CEQA Guidelines suggests that a development project could have a significant impact on geology and soils resources, if the project would:

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. Refer to the Division of Mines and Geology Special Publication 42.

b). Strong seismic ground shaking.

c). Seismic-related failure, including liquefaction.

d). Landslides.

2). Result in 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- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

4). Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

b. Rationale for Establishing Local Thresholds

Consistent with CEQA Guidelines, the City of Merced, through the adoption of the Merced Vision 2015 GP EIR, adopted several thresholds of significance that are used in determining the Specific Plan's impact on geology and soil resources. Adoption of these thresholds allows the City of Merced to provide standards of significance in addition to those provided solely by CEQA. These thresholds are described in detail hereafter.

c. Thresholds of Significance Adopted in This EIR

The City of Merced, as the Lead Agency, has adopted the following as thresholds of significance, consistent with CEQA Guidelines, and has determined that impacts related to geology and soils resources will result if the Specific Plan would:

- Expose people or structures to hazards or nuisances such as geological hazards and other similar hazards and /or nuisances.

The three other suggested CEQA environmental considerations are not relevant to this project, as they do not apply to the proposed Specific Plan.

d. Regulatory Setting

The City of Merced regulates soils and geology hazards through the implementation of adopted policies and programs contained in the Merced General Plan. The Merced General Plan prescribes goals, policies, and action items that monitor these resources, as identified in the Environmental Setting portion of this section.

e. Significant Direct Impacts

According to the Merced Vision 2015 GP EIR, impacts related to geology and soils are addressed through the City's normal review and development practices. Because the same review process and development practices will apply to all development under the proposed Specific Plan, impacts related to geology and soils from the implementation of the proposed Specific Plan will be less than significant.

f. Significant Cumulative Impacts

Buildout of pending and approved projects in the City of Merced will increase development in the region. Buildout under the Merced General Plan will result in additional residents and structures that could potentially be placed at risk. However, grading and seismic issues will be addressed on a case-by-case basis to mitigate impacts resulting from individual projects. In addition, all projects, including those proposed within the Specific Plan area, will be required to adhere to seismic standards contained in the Uniform Building Code, as well as adopted City

policies pertaining to grading and building of new structures. With implementation of these measures, the cumulative impact related to geology and soils will be *less than significant*.

3. MITIGATION MEASURES ADOPTED TO MINIMIZE SIGNIFICANT EFFECTS

a. Measures that Mitigate Project Impacts

Because the impact will be less than significant, no mitigation is required.

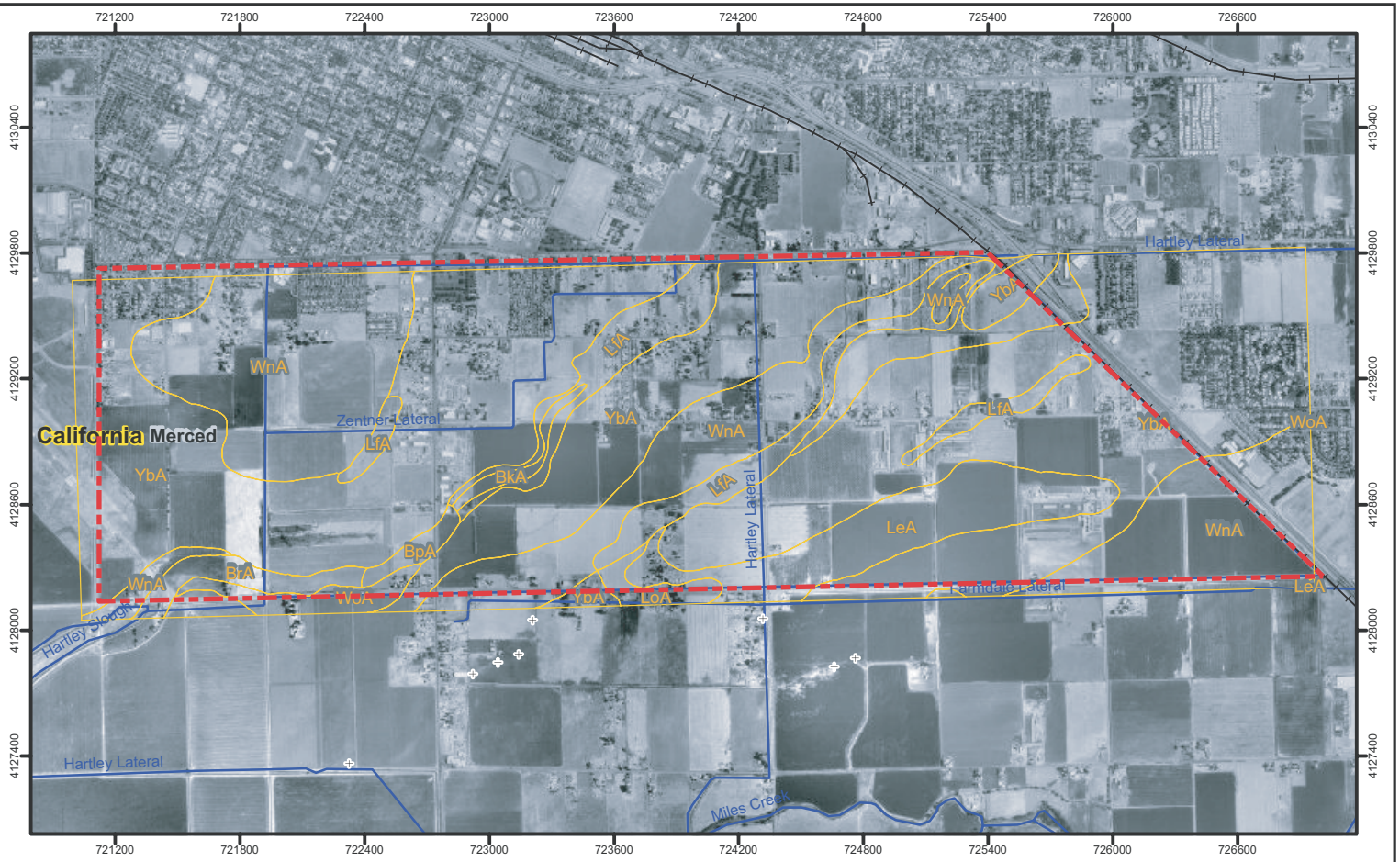
b. Measures that Mitigate Cumulative Impacts

Because the cumulative impact will be less than significant, no mitigation is required.

MAP LEGEND

- Soil Map Units
- Cities
- Detailed Counties
- Detailed States
- Project Boundary
- Interstate Highways
- Roads
- Rails
- Water
- Hydrography
- Oceans
- Escarpment, bedrock
- Escarpment, non-bedrock
- Gulley
- Levee
- Slope
- Blowout
- Borrow Pit
- Clay Spot
- Depression, closed
- Eroded Spot
- Gravel Pit
- Gravelly Spot
- Gulley
- Lava Flow
- Landfill
- Marsh or Swamp
- Miscellaneous Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Slide or Slip
- Sinkhole
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Perennial Water
- Wet Spot

USDA Natural Resources Conservation Service



Meters: 0 250 500 1,000

Feet: 0 500 1,000 2,000 3,000 4,000

Web Soil Survey 1.1
National Cooperative Soil Survey

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov

Coordinate System: UTM Zone 10

Soil Survey Area: Merced Area, California
Spatial Version of Data: 2
Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
8/15/1998; 8/18/1998; 9/16/1998; 7/30/1999

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

SOILS MAP

Project No.: 17325731	Date:DECEMBER 2006	Project: SOUTH MERCED SPECIFIC PLAN AREA	Figure IVJ-1

K:17325731/figl3.ai

URS

K. HYDROLOGY/WATER QUALITY

This section of the EIR addresses the environmental setting, potential impacts and mitigation measures for hydrology and water quality for both surface and groundwater. It includes an assessment of on-site and off-site effects of the South Merced Specific Plan on groundwater resources, surface water resources, drainage patterns, and erosion and sedimentation.

1. ENVIRONMENTAL SETTING

The following information is provided in accordance with Section 15125 of the CEQA Guidelines. This environmental setting is the baseline for determining whether a project's impacts are significant.

a. Study Area for Direct Impacts

The South Merced Specific Plan area will be the study area for direct impacts related to hydrology and water quality. Development increases stormwater runoff and potable water usage (groundwater, in this case); therefore, the entire geographic project area must be considered when reviewing hydrology and water quality impacts.

b. Surrounding Area

An indistinct divide that interrupts the lengthwise slope of the San Joaquin Valley separates the Valley into two hydrologic sub-basins. The San Joaquin Sub-basin is to the north, and the Tulare Sub-basin is to the south. Merced County is within the San Joaquin Sub-basin. The San Joaquin Sub-basin drains into the Pacific Ocean, and the Tulare Sub-basin has an outlet only when rare flood flows carry its water into the San Joaquin Sub-basin. Merced County is further divided into the two major sub-basin drainage basins, the Merced River and the San Joaquin River.[4]

c. Study Area for Cumulative Impacts

The cumulative context for the evaluation of hydrology and water quality impacts includes the project area in combination with existing development and anticipated development in Merced County that has the potential to impact the Fahrens Creek or Cottonwood Creek watersheds or the underlying groundwater aquifers. Development increases stormwater runoff and may modify existing flood zones, thus potentially impacting downstream conditions.

d. Methods

Information was obtained from the *Merced County Year 2000 General Plan* (Merced County, 1990), the *Flood Insurance Study for Merced County, California and Incorporated Areas* (FEMA, 2006), the *Merced Water Supply Plan Update: a Regional Cooperation Effort* (CH2M HILL, 2001), the *Merced Vision 2015 General Plan* (City of Merced, 1997a), *2000 Merced Strategic Reuse Plan* (City of Merced, 2000), the *2005 Urban Water Management Plan* (Brown

[4] Merced County Planning Department, 1989, *Merced County Year 2000 General Plan*.

and Caldwell, 2005), responses to the NOP, and other studies for the project site and surrounding area.

e. Existing Physical Conditions in the Study Area

(1) Regional and Local Hydrology

(a) Topography

The project is located in the southwestern area of the City of Merced, at the base of the Sierra Nevada foothills, just southwest of Yosemite Lake, a man-made lake. From the foothills, the land gradually slopes down to the southwest toward the San Joaquin River (Merced County, 1990). The topography over most of the project area is fairly flat (less than 1% slope), with the lowest elevations at the southwestern corner and the highest in the southeastern quarter of the site and northern edge.

(b) Rainfall

The average total annual precipitation in the vicinity of the project is about 12.5 inches, based on rainfall measured from 1948 through 2005 at the Merced Municipal Airport (Western Regional Climate Center [WRCC], 2006). The average precipitation at the project site should be similar to the precipitation measured at the Merced Municipal Airport.

(c) Surface Water Resources

The streams in the region are intersected by several irrigation canals, including the Main Canal, Fairfield Canal, and Le Grand Canal, which are operated by MID. In the project area specifically, there are two drainage canals: the Lower Golf Lateral, which runs from the Merced Golf Club, enters the project site from the north, and exits to the south; and the Tower Lateral, which runs from Lake Yosemite, entering the site from the east and exiting to the west.

(d) Flooding

Flooding on Fahrens Creek has been studied in detail by FEMA, from the confluence with Black Rascal Creek to G Street (approximately 5.3 miles) (FEMA, 2006). The flood insurance study discusses Merced County and unincorporated cities requiring floodplain management. According to the FEMA study, Fahrens Creek is within a designated floodplain zone and is subject to local and county floodplain land-use ordinances.

The National Flood Insurance Act of 1968, which established the National Flood Insurance Program (NFIP), provided for the availability of flood insurance within communities that were willing to adopt floodplain management programs to mitigate future flood losses. The act also required the identification of all floodplain areas within the United States and the establishment of flood-risk zones within those areas. The responsibility for administration of the NFIP falls with the Federal Insurance Administration of the Federal Emergency Management Agency (FEMA).

(e) Groundwater Resources

The project area is within the Merced Sub-basin of the San Joaquin Valley Groundwater Basin. There are three levels of groundwater aquifers in the sub-basin: an unconfined aquifer, a confined aquifer, and the aquifer contained in consolidated rock (DWR, 2003). Groundwater supplies approximately 50% of the total water demand within the Merced Sub-basin, and it is the only source of water for municipal use. Currently, no groundwater wells are being used specifically within the project area. It is anticipated that drinking water will be supplied by the City of Merced. The City requires one water well per square mile.

(f) A Cooperative Water Supply Plan

The City of Merced and the MID share the common goal of preserving and enhancing the economic vitality of eastern Merced County. These two agencies recognize that water is the lifeblood of the economy. Rapid population growth, changing agricultural practices, increased dependence on groundwater, and increased demands for water for environmental purposes have threatened the delicate water balance in the area. Water is vital to the Merced area and paramount to a productive agricultural economy. The growing City of Merced uses groundwater as its source of potable water. Historical trends indicate that agricultural use of groundwater has been increasing. The combination of urban and agricultural demands on the groundwater supply, coupled with less surface water applied to lands, and therefore less water percolating into the ground, has led to declining aquifer levels. Furthermore, the economic strength of the City of Merced is inseparably tied to the financial success of MID's customer base. The strong agricultural economy of the City of Merced and other outlying urban areas is dependent upon a reliable source of water. For these primary reasons, the two agencies have developed a history of cooperation and coordinate their efforts to meet future challenges.

In 1992, the City of Merced and MID cooperatively developed an MOU concerning water supply issues and commissioned the preparation of a comprehensive examination of water supply needs. In 1995, following 3 years of technical analyses and extensive public involvement activities, the *Merced Water Supply Plan* (CH2M HILL, Updated 2001) (Plan) was completed. The Plan highlighted water needs through the year 2030 and recommended actions needed to provide a safe, reliable, and economical source of supply. Since adoption of the 1995 Plan, the agencies have implemented several of the recommendations. They also have been faced with a number of new conditions, including the decision to locate the new UC in the study area, the preparation of a Groundwater Management Plan for the area (AB3030), the preparation of an Agricultural Water Management Plan for the area (AB3616), changing instream flow conditions on the Merced River, and better data and understanding of the study area's water resources.

URS has prepared a SB 610 Water Supply Assessment for the project area, in conformance with CEQA requirements. The result of this report is summarized below.

Future water supplies for the SMSP project area and cummulative development with the SUDP area would consist of groundwater pumping from the Merced groundwater Sub- basin. According the DWR the Merced Sub-basin is in a mild state of overdraft. However the City working jointly with MID and others have developed a groundwater management plan (GWMP)

the goals and objecives of which include restoring and preserving groundwater at 1999 levels through a combination of actions previously described. The estimated water demand for the SMSP area was included in analyses conducted as a part of the 2005 UWMP, the 2001 Merced Water Supply Plan Update and the City of Merced, Specific Urban Development Plan analyses. With onging implementation of the recommendations in these Plans the City will be able to meet its future water demands and support the broader basin-wide objectives. Therefore, future water supplies would be adequate to meet the water demands of the SMSP area

(g) Tsunamis/Seiches/Mudflows

Tsunamis are defined as sea waves created by undersea fault movement. The Specific Plan area is located inland from the Pacific Ocean, and will not be exposed to flooding risks from tsunamis.

Seiches are known to have occurred during earthquakes, but none have been recorded in the Bay Area or in the Central Valley. The Specific Plan is proximate to the Yosemite Lake Dam. However, the City of Merced has ongoing programs in place to implement flood protection, as discussed in the *Merced Vision 2015 General Plan* (p. 14-51).

Mudflows typically occur in mountainous or hilly terrain. The Specific Plan area and its surrounding areas are relatively flat. As a result, the Specific Plan area will not be threatened by the likelihood of mudflows.

f. Project Design Elements that Avoid Hydrology and Water Quality Impacts

Specific development within the project area will require additional analysis and on-site stormwater storage facilities, as required.

The continued updating of the Groundwater Management Plan and Agricultural Water Management Plan should continue and be followed by the City of Merced's modification of design and development regulations.

g. Adopted Policies and Regulations that Avoid Hydrology and Water Quality Impacts

(1) State

(a) Central Valley Regional Water Quality Control Board

Projects that disturb one or more acres of soil require coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 99-08-DWQ). The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) to prevent discharge to stormwater.

(2) Local

(a) City of Merced Vision 2015 General Plan

- According to the GP EIR (p. 2.5), Mitigation Measure 2-a requires that appropriate City review take place for projects involving direct discharge into the surface water system. This measure reduces this impact to *less than significant*.
- According to the GP EIR (p. 2.5), Mitigation Measure 2-b requires that the City's water conservation policy be periodically reviewed to ensure continued success in the reduction of water use. This measure reduces this impact to *less than significant*.
- Proposed drainage improvements resulting from development under the Specific Plan will be performed in accordance with Title 17, Chapter 17.48 (Flood Damage Prevention) of the Merced Municipal Code.
- According to the GP EIR (p. 2.5), Mitigation Measure 2-a requires that appropriate City review take place for projects involving direct discharge into the surface water system. This measure reduces these impacts to *less than significant*.
- According to the GP EIR (p. 2.2), *no significant impacts* from flooding are expected to result from development under the General Plan, as a result of existing policies and programs for flood protection that are in place.

(b) City of Merced Engineering Department Design Standards

New construction in Merced adheres to the following requirements for protection from damage in designated areas of flooding, such as the FEMA 100-year "A" zones shown on the Flood Insurance Rate Map (FIRM) (FEMA, 1995):

- All new construction, including additions, has habitable finished floor elevations above the designated flood elevation.
- For commercial structures, habitable floor space need not be above the flood elevation, but must be floodproofed to that elevation. The floodproofing must be of engineered design and articulated barriers used only in localized entry and exit points.

2. CONSIDERATION AND DISCUSSION OF SIGNIFICANT ENVIRONMENTAL IMPACTS

The following information is provided in accordance with Section 15126.2 of the CEQA Guidelines and the local City of Merced's adopted thresholds of significance specified in the Merced Vision 2015 GP EIR. The local thresholds are in addition to those required pursuant to CEQA.

a. Environmental Considerations Suggested in CEQA

Appendix G of the CEQA Guidelines suggests that a development project could have a significant impact on Hydrology and Water Quality, if the project would cause any of the following effects:

i. Violate any water quality standards or waste discharge requirements.

ii. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

iii. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

iv. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

v. 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.

vi. Otherwise substantially degrade water quality.

vii. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

viii. Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

ix. 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.

x. Inundation by seiche, tsunami, or mudflow.

b. Rationale for Establishing Local Thresholds

Consistent with CEQA Guidelines, the City of Merced, through the adoption of the Vision 2015 GP EIR, adopted several thresholds of significance that are used in determining the Specific Plan's impact on hydrology and water quality. These thresholds are described in detail hereafter.

c. Thresholds of Significance Adopted in This EIR

The City of Merced, as the Lead Agency, has adopted the following thresholds of significance, consistent with CEQA Guidelines and the *Merced Vision 2015 General Plan*, to evaluate potential impacts of the proposed project on hydrology and water quality. An impact on hydrology and water quality will be considered significant if the impact meets one or more of the following criteria:

i. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

ii. 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 flooding on- or off-site.

iii. Runoff of water from the project degrades the quality of surface water or the underlying aquifer, or the runoff causes flooding problems.

iv. 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.

Information was obtained from the *Merced County Year 2000 General Plan* (Merced County, 1990), the *Flood Insurance Study for Merced County, California and Incorporated Areas* (FEMA, 2006), the *Merced Water Supply Plan Update, A Regional Cooperation Effort* (CH2M HILL, 2001), the *Merced Vision 2015 General Plan* (City of Merced, 1997a), the *2000 Merced Strategic Reuse Plan* (City of Merced, 2000), the *2005 Urban Water Management Plan* (Brown and Caldwell, 2005), responses to the NOP, and other studies for the project site and surrounding area.

In evaluating the CEQA significance standards in light of the existing and proposed conditions of the project area, it has been determined from site analysis and the review of the specified documents that the Specific Plan is not expected to pose any unique threats to hydrology/water quality. However, as development projects occur over time in the area, there could be some potential to deplete groundwater supplies, alter drainage patterns, increase runoff, and expose the area to risk of flood.

The Specific Plan will not have an adverse impact on water quality standards or waste discharge requirements or degrade water quality. Essentially, the wastewater generated by any development will be sent to the Merced Wastewater Treatment Plant. The Specific Plan project area will generate wastewater typical of other residential and commercial developments in the Merced area. Therefore, this is not considered to be an issue of significance for this project.

This plan will not result in the placement of homes within the 100-year flood hazard area, provided that the existing canal banks are retained, and the commercial structures proposed within this flood hazard area are not expected to impede or redirect flood flows.

Finally, the Specific Plan will not result in significant inundation by seiche, tsunami, or mudflow, as tsunamis do not occur in this region. Lake Yosemite, located nearby, is not likely to generate seiche (as indicated in the *Merced Vision 2015 General Plan*), and the site is not located below hillsides that are prone to mudslides. All major construction and development projects will be subject to the stormwater control requirements of the RWQCB during construction and served by groundwater provided by the City of Merced.

d. Regulatory Setting

(1) Federal

(a) Federal Clean Water Act

The CWA (United States Code, Title 33) provides for two types of pollution control limits: limits on the quantity of pollutants discharged from a point source into a navigable body of water; and ambient water quality standards for navigable waters of the United States that are based on beneficial uses and require more stringent control of discharge, if necessary. In addition to these point source and ambient water quality control limits, Section 319 of the CWA provides direction for state control of nonpoint source discharges. (See Appendix G for more information regarding the Clean Water Act).

(2) State

(a) California Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 authorized the State Water Resources Control Board (SWRCB) to provide comprehensive protection for California's waters through water allocation and water quality protection. The SWRCB implements the requirement of CWA Section 303 that water quality standards be set for certain waters by adopting water quality control plans under the Porter-Cologne Act.

(b) Central Valley Regional Water Quality Control Board Basin Plan

The proposed project site is within the jurisdiction of the Central Valley RWQCB (Region 5). The RWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters located within its jurisdiction.

(c) California Water Code Section 10910

Senate Bill 610 was enacted in January 2002; it amended Section 21151.9 of the PRC and Sections 10910, et seq., of the Water Code. Section 10910 ensures that water supply availability is considered before large development projects are approved. Section 10910 applies to residential development with more than 500 dwelling units. It directs the likely water purveyor

for the project area to provide a water supply assessment to determine whether its total projected water supplies will meet the projected water demand associated with the project.

e. Significant Direct Impacts

Information was obtained from the *Merced County Year 2000 General Plan* (Merced County, 1990), the *Flood Insurance Study for Merced County, California and Incorporated Areas* (FEMA, 2006), the *Merced Water Supply Plan Update: a Regional Cooperation Effort* (CH2M HILL, 2001), the *Merced Vision 2015 General Plan* (City of Merced, 1997a), the *2000 Merced Strategic Reuse Plan* (City of Merced, 2000), the *2005 Urban Water Management Plan* (Brown and Caldwell, 2005), responses to the NOP, and other studies for the project site and surrounding area.

In evaluating the CEQA significance standards in light of the existing and proposed conditions of the project area, it has been determined from site analysis and the review of the cited documents that this project is not expected to pose any unique threats to hydrology and water quality other than what is created by urban runoff. Moreover, the study area is subject to federal and state water regulations such as those established under applicable provisions of Section 303 of the federal CWA and the State's Porter-Cologne Water Quality Control Act. Overall, existing water quality in the study area can be characterized as moderate to good (City of Merced, 1997b, Section 4.3).

This project, however, will not have an adverse impact on water quality standards or waste discharge requirements or degrade water quality. The wastewater generated by the project area will be sent to the Merced Wastewater Treatment Plant. The volume of wastewater to be generated has been accounted for in the *2000 Merced Strategic Reuse Plan* (City of Merced, 2000). The project area will generate wastewater typical of other residential and commercial developments in the Merced area and is therefore not considered to be an issue of significance for this project.

Like all development, the Specific Plan area will be subject to stormwater control requirements of the RWQCB during construction. The project area also will be served by groundwater provided by the City of Merced. The topic of water supply is addressed in Section H, Public Services and Facilities, Utilities, and Recreation, in this SP EIR.

The Specific Plan and subsequent development will not result in the placement of homes within a 100-year flood hazard area, provided that the existing canal banks are retained, and the commercial structures proposed within this flood hazard area are not expected to impede or redirect flood flows. It is assumed that all development and construction activities will comply with adopted standards and conform to all rules and regulations at the time of the proposed development.

The Specific Plan will not result in significant inundation by seiche, tsunami, or mudflow because tsunamis do not occur in this region. Lake Yosemite is not likely to generate seiche (as indicated by the *Merced Vision 2015 General Plan*), and the project area is not located below hillsides that are prone to mudslide.

Development under the Specific Plan is not expected to pose any unique threats to hydrology and water quality. Like all major construction and development projects, it will be subject to storm-water control requirements of the RWQCB during construction. None of the responses to the NOP indicated any hydrology or water quality impacts. The project will be served by ground-water provided by the City of Merced.

(1) Impact HYD-1

The project will result in possible reduction of groundwater supply as a result of additional demand for drinking water, which is currently retrieved from the groundwater supply by Merced City Water Utility. Increased use of groundwater to meet increased demand for drinking water may deplete the groundwater supply. This impact can be fully mitigated through the adoption of the mitigation measures presented hereafter.

(2) Impact HYD-2

Future development within the project area will alter drainage patterns in specific sites and increase the rate or amount of surface runoff, which may result in substantial siltation or erosion on- or off-site and increase the amount of urban pollutants in stormwater runoff, which could affect water quality. This impact can be fully mitigated through the adoption of mitigation measures presented hereafter.

(3) Impact HYD-3

Development within the project area will alter drainage patterns in the project area and increase the rate or amount of surface runoff, which may exceed the holding capacity of the stormwater drainage system, resulting in flooding on- or off-site. This impact is less than significant.

(4) Impact HYD-4

Development within the project area may result in stormwater runoff during construction, which may substantially degrade water quality. This impact can be fully mitigated through the adoption of mitigation measures presented hereafter.

(5) Impact HYD-5

Development within the project area may expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of Yosemite Lake Dam. However, the dam is over six-miles from the planning area and the City of Merced does have ongoing programs in place to implement flood protection, as discussed in the *Merced Vision 2015 General Plan* (p. 14-51). This impact is less than significant.

f. Significant Cumulative Impacts

(1) Impact HYD-6

Development in the project area, in conjunction with other development in the region, could increase impervious surface coverage in the surrounding watersheds and increase stormwater runoff, but it would not result in substantial sources of polluted runoff and therefore would not have a substantial adverse effect on receiving water quality. This impact is less than significant.

3. MITIGATION MEASURES ADOPTED TO MINIMIZE SIGNIFICANT EFFECTS

a. Measures that Mitigate Direct Impacts

(1) Mitigation HYD-1

According to the *Merced Vision 2015 General Plan*, the *2001 Merced Water Supply Plan* (CH2M HILL, Updated 2001) has been established to prevent the decline of groundwater supplies through the year 2030 through groundwater recharge facilities. The GP EIR (City of Merced, 1997b) maintains that the water conservation policy of the City should be reviewed periodically to determine the need, appropriateness, and feasibility of implementing the conservation practices suggested in the *Merced Water Supply Plan*.

(2) Mitigation HYD-2

Development of the project will convert an area that contains agricultural and low density into a higher density environment.

Potential pollutants associated with urban runoff include metals, pesticides, organic compounds, oil and grease, nutrients, suspended and dissolved solids, and bacteria. The increased impervious surfaces associated with development will increase the rate and volume of runoff. Increased flow rates and volumes have the potential to increase erosion and sedimentation in downstream drainages.

As part of the National Pollutant Discharge Elimination System (NPDES) permit, the development within the project area will be required to include Best Management Practices (BMPs), such as vegetated swales and filter strips, storm drain system stenciling at drain inlets, and engineered treatment facilities to prevent pollutants from degrading the quality of receiving waters.

Most of the project area consists of very mild slopes, resulting in slow runoff, so the potential for substantial erosion or siltation on site is not significant. To decrease the volume of runoff, the specific development projects should be required to maximize infiltration of runoff and incorporate measures into the project design that will minimize the increase in runoff volume, compared to existing conditions. Possible measures include, but are not limited to:

- Site design layout to reduce and disconnect impervious surfaces;
- Tree boxes to capture and infiltrate street runoff;
- Vegetated swales, buffers, and strips;

- Preservation of native vegetation;
- Directing downspouts to rain gardens; and
- Utilizing pervious paving.

To prevent degradation of downstream surface water, any construction associated with the realignment of canals and laterals should occur during the dry season.

(3) Mitigation HYD-3

Implementation of the following Specific Plan policies will further minimize effects on hydrology and water quality.

- SP Policy I-1.1 Seek to provide storm-water drainage facilities to minimize flooding and to provide for pedestrian movement.
- SP Policy I-1.2 Remove jurisdictional boundary conflicts to make it easier for problems to be resolved.
- SP Policy I-1.3 Explore opportunities for an area-wide drainage system integrated with an open space network and centralized detention basin as a natural water feature.
- SP Policy I.1.4 Ensure that infrastructure required of private development projects located in County (but within future City limits) is documented and installed at the earliest possible time.

(4) Mitigation HYD-4

Specific development projects within the project area will involve construction activities, such as grading and excavation, for residential and commercial buildings, roads, driveways, and utility trenches, which may cause increases in erosion during storm events that will discharge sediment into surface waters. Other pollutants, such as fuels, paints, and cleansers, could be released accidentally at construction sites and could enter surface waters. These pollutants could adversely affect water quality and other beneficial uses of the surface drainages, as well as down-stream receiving waters.

In compliance with NPDES Phase II regulations, during and following construction, developers will prepare and implement an SWPPP for the planned development. The SWPPP is used to identify and control potential sources of pollutants to runoff. Some typical measures that will be used to comply with the NPDES permit include, but are not limited to:

- Minimizing disturbed areas;
- Implementing structural and procedural BMPs for collecting, handling, storing, and disposing of wastes generated during construction;

- Implementing temporary erosion and sediment control measures during construction; and
- Stabilizing cleared or graded slopes.

Because law requires implementation of the SWPPP, the potential for construction activities to cause erosion and other water quality impacts is low. Implementation of Mitigation HYD-3 would prevent construction during the wet season on slopes greater than 5%, unless erosion and sediment control measures are implemented.

Implementation of Mitigation HYD-4, in combination with measures implemented as part of the SWPPP for controlling sediment from leaving the site and preventing pollution, will ensure that potentially significant impacts from construction site runoff are reduced to less than significant levels.

(6) Mitigation HYD-5

Potential for exposure to flooding from a Yosemite Lake dam failure (over 6 miles from planning area) is unlikely in this project area. According to the *Merced Vision 2015 General Plan*, both Castle Dam and a diversion structure that helps to divert more than 1,200 cubic feet of water per second from MID's main canal are present to help reduce the flow to Yosemite Lake. In addition, the Merced Vision 2015 GP EIR states that flood control plans and development policies are in place in the Merced area to minimize potential flood hazard problems. In the event of high water levels in the lake, water will be discharged into canals. Flooding from these canals will be controlled, limiting the exposure of the project area to any damage resulting from dam failure.

b. Measures that Mitigate Cumulative Impacts

(1) Mitigation HYD-6

The City and County of Merced must comply with NPDES permit requirements, and all future projects in the watershed will be subject to NPDES Phase II regulations. These regulations require that source control and nonpoint source BMPs be employed to control potential effects on water quality and that stormwater quality control devices be incorporated into stormwater collection systems to collect sediment and other pollutants. Therefore, the cumulative impact on water will be less than significant.

L. MINERAL RESOURCES

1. POTENTIAL ENVIRONMENTAL EFFECTS

Appendix G of the CEQA Guidelines suggests that a development project could have a significant impact on mineral resources if the project would cause any of the following effects.

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or

b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

2. REASONS WHY EFFECT NOT FOUND SIGNIFICANT

The California Legislature adopted the Surface Mining and Reclamation Act (SMARA) in 1975, which designates Mineral Resource Zones (MRZs) for areas possessing minerals that are of statewide importance. The City of Merced does not contain any mineral resources that require managed production, as required under SMARA. As stated in the Merced Vision 2015 GP EIR (p. 7-11), no MRZs exist within the City of Merced, including within the South Merced Specific Plan area.

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M. ISSUES NOT ADDRESSED IN DETAIL IN THIS EIR

1. AESTHETICS

a. Potential Environmental Effects

A project may have a substantial adverse effect on a scenic vista or the existing visual character or quality of the site and its surroundings; substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway; or create a new source of substantial light or glare that will adversely affect day or nighttime views in the area.

b. Reasons Why Effect Not Found Significant

The *Merced Vision 2015 General Plan* does not formally designate the Specific Plan area as an area of scenic value. Furthermore, according to the Caltrans Scenic Highway System, there are no designated State Scenic Highways in the Specific Plan area. Portions of the Specific Plan area will experience a change from the rural character that is present, given the nature of the proposed development under the Specific Plan. However, there will not be a substantial degradation of the existing visual character or quality of the site and its surroundings.

2. POPULATION/HOUSING

a. Potential Environmental Effects

A project may displace existing housing or population.

b. Reasons Why Effect Not Found Significant

Development under the Specific Plan is only expected to induce population growth that is consistent with the *Merced Vision 2015 General Plan*. None of the responses to the NOP indicated any population or housing impacts. The existing housing within the Specific Plan area boundaries will remain. Therefore, there will be no loss in existing housing. The land-use concept prepared for the Specific Plan has actually set aside portions of the Specific Plan area for the development of future additional housing. Therefore, the project actually will result in a net increase in available housing for the City.

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According to Section 15130(a) of the CEQA Guidelines, "An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in Section 15065(c). 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." In addition, "The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as provided for the effects attributable to the project alone" (Section 15130(b) of the CEQA Guidelines).

The following are not discussed because, with mitigating measures, the impacts are not cumulatively considerable:

- C. Cultural Resources; and
- H. Public Services and Facilities, Utilities, and Recreation.

A. AIR QUALITY

Conclusion: Impacts are cumulatively significant and unavoidable.

Rationale: Build out of the South Merced Specific Plan will convert agricultural lands into lands for non-agricultural use. As a result, the Specific Plan will increase the number of stationary, indirect, and mobile criteria pollutant sources in the SJVAB. Therefore, the impact from the South Merced Specific Plan is considered to be significant.

The EPA has designated the SJVAB as being in nonattainment of the federal ozone and PM_{10} standards. Therefore, any addition to these criteria pollutants is cumulatively considerable and is considered to be significant and unavoidable.

All the measures that mitigate direct impacts also reduce cumulative impacts on air quality. There are no feasible mitigation measures that will address regional emissions from sources that are not within the South Merced Specific Plan. Offset requirements from Stationary Source Rule 2201 and Indirect Source Rule 9510 will reduce cumulative impacts, but these are not considered mitigation measures, as they are requirements set by the SJVAPCD.

B. BIOLOGICAL RESOURCES

Conclusion: Impacts are not cumulatively considerable.

Rationale: The incremental contribution of the implementation of the Specific Plan to the cumulative loss of habitat for special-status plant and wildlife species, as well as jurisdictional waters, will be addressed and fully mitigated by a comprehensive set of mitigation measures. Implementation of the mitigation measures and standards will reduce potential impacts to biological resources below cumulatively considerable levels. Therefore, potential cumulative impacts from the implementation of the Specific Plan are expected to be less than significant.

D. HAZARDS AND HAZARDOUS MATERIALS

Conclusion: Impacts are not cumulatively considerable.

Rationale: All generation, transport, and treatment of hazardous materials within the Specific Plan area and surrounding areas will be in full compliance with federal, state, and local requirements.

E. LAND USE AND PLANNING

Conclusion: Impacts are not cumulatively considerable.

Rationale: The Specific Plan will conflict with land-use designations and policies related to land use found in the *Merced Vision 2015 General Plan*. Locations in the Specific Plan area have been redesignated from the existing GP designations. However, the new land-use designations provide for similar types of land uses for the Specific Plan area as a whole, which include residential, commercial, industrial, open space, recreational, and agricultural uses. Therefore, the cumulative impacts are not cumulatively considerable.

F. NOISE

Conclusion: Impacts are not cumulatively considerable.

Rationale: Of the four identified impacts, only one has been identified as potentially significant, and this impact can be mitigated to a level of less than significant. No cumulative impacts for noise have been identified; therefore, in conjunction with the identified direct impacts and corresponding mitigation measures, noise impacts will not be cumulatively considerable for this project.

G. TRANSPORTATION/TRAFFIC

Conclusion: Impacts are cumulatively considerable and unavoidable.

Rationale: Although the City's General Plan has a policy of LOS D, this, in itself, does not avoid impacts. Existing conditions and required improvements outside of the control of the Applicant, and even the City, prevent the policies from being fully implemented to avoid traffic impacts. The mitigation required to reduce impacts to less than significant, or where mitigation is not feasible and the impact has been determined significant, are described in Section G, Transportation/Traffic, of this SP EIR.

I. AGRICULTURAL RESOURCES

Conclusion: Impacts are cumulatively considerable and unavoidable.

Rationale: Cumulative development within the City of Merced and its immediate vicinity will gradually alter the rural character of the area and have the potential to affect current agricultural

operations. The South Merced Specific Plan will substantially contribute to this change. This impact will be significant and unavoidable.

Individual development projects in South Merced and within nearby unincorporated areas will have the potential to create compatibility conflicts relating to the interface of existing urban and rural uses and new urban development. Such conflicts are expected to be addressed on a case-by-case basis and can be resolved through appropriate design and implementation of adopted policies. Cumulative agricultural compatibility conflicts will be less than significant.

J. GEOLOGY AND SOILS

Conclusion: Impacts are not cumulatively considerable.

Rationale: The Specific Plan will result in a less than significant cumulative impact in conjunction with other area projects through adherence to seismic standards contained in the Uniform Building Code and applicable City policies; therefore, no additional measures are required to address cumulative impacts.

K. HYDROLOGY/WATER QUALITY

Conclusion: Impacts are not cumulatively considerable.

Rationale: Drainage can be handled on site, and the project will comply with the NPDES regulations. During and following construction, each Applicant will prepare and implement an SWPPP for the planned development. Cumulative impacts to water quality, groundwater supply, drainage, and runoff are not likely to be significant with the development of the Specific Plan, compliance with stormwater permitting processes, and the implementation of mitigation measures.

L. MINERAL RESOURCES

Conclusion: Impacts are not cumulatively considerable.

Rationale: The California state legislature adopted the SMARA in 1975, which designates MRZs for areas possessing minerals that are of statewide importance. The City of Merced does not contain any mineral resources that require managed production as required under SMARA. As indicated in the Merced Vision 2015 GP EIR (p. 7-11), no MRZs exist within the City of Merced, including within the South Merced Specific Plan area. As a result, there are no cumulatively considerable impacts related to mineral resources.

M. ISSUES NOT ADDRESSED IN DETAIL IN THIS EIR

1. AESTHETICS

Conclusion: Impacts are not cumulatively considerable.

Rationale: The *Merced Vision 2015 General Plan* does not formally designate the Specific Plan area as an area of scenic value. Furthermore, according to the Caltrans Scenic Highway System, there are no designated State Scenic Highways in the Specific Plan area. Portions of the Specific Plan area will experience a change from the rural character that is present as a result of the nature of the proposed development under the Specific Plan. However, there will not be a substantial degradation of the existing visual character or quality of the site and its surroundings. Considering that little aesthetic value is attributed to the area, the development of the Specific Plan area, combined with future development in the vicinity, will not have cumulatively considerable impacts to aesthetics.

2. POPULATION/HOUSING

Conclusion: Impacts are not cumulatively considerable.

Rationale: Development under the Specific Plan is only expected to induce population growth that is consistent with the *Merced Vision 2015 General Plan*. None of the responses to the NOP indicated any population or housing impacts. The existing housing within the Specific Plan area boundaries will remain. Therefore, there will be no loss in existing housing. The land-use concept prepared for the Specific Plan has set aside portions of the Specific Plan area for the future development of additional housing. Therefore, the project will actually result in a net increase in available housing for the City, and impacts to population and housing will not be cumulatively considerable, even with other future development in the surrounding area.

A. BACKGROUND

In accordance with Section 15126.2(d) of the CEQA Guidelines, an EIR must "discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." In addition, when discussing growth-inducing impacts of a proposed project, "it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment" (Section 15126.2(d) of the CEQA Guidelines). Two issues must be considered when assessing the growth-inducing impacts of a project: elimination of obstacles to population growth and promotion of economic growth.

B. ELIMINATION OF OBSTACLES TO POPULATION GROWTH

The elimination of either physical or regulatory obstacles to population growth is considered to be a growth-inducing impact. A physical obstacle to population growth typically involves the lack of public service infrastructure. The extension of public service infrastructure, including roadways, water mains, and sewer lines, into areas that are not currently provided with these services is expected to support new development. Similarly, the elimination of change in a regulatory obstacle, including existing growth and development policies, can result in new population growth. Similarly, the elimination of change in a regulatory obstacle, including the adoption of the South Merced Specific Plan and its implementing policies and subsequent regulations and development policies, can result in new population growth.

C. PROMOTION OF ECONOMIC GROWTH

Increased industrial, commercial, and residential development typically generates a secondary or indirect demand for other services. The City's growing population will require additional goods and services, such as groceries, entertainment, professional offices, and industrial development. These will stimulate economic activity. The increase of land areas identified for commercial and industrial and the implementation of the South Merced Specific Plan policies will stimulate economic activity.

D. SUMMARY/CONCLUSIONS

The project will eliminate obstacles to population growth by approving the development of residential, commercial, and industrial properties within the project area and by expanding infrastructure to the area. In addition, the project will eliminate obstacles to growth within the South Merced project area through the approval and implementation of the Specific Plan. The development of businesses within the project area and the creation of jobs for those businesses occupying the commercial and industrial areas will lead to secondary or indirect growth in population. This secondary increase is not likely to have a noticeable impact on the growth of Merced, given the development of other areas. This citywide growth was anticipated and addressed in the adoption of the *Merced Vision 2015 General Plan*. The Merced Vision 2015 GP EIR states: "the overall benefits derived from having a plan for the orderly development of the community outweighs potential harmful effects that may be indirectly induced from Plan

adoption and implementation." If the project is adopted as proposed, the impact will be significant and unavoidable.

A. IRREVERSIBLE IMPACTS

According to CEQA Guidelines Section 15126.2(c), an EIR must include a description of significant irreversible environmental changes that will be caused by the proposed action.

Development resulting from the Specific Plan will result in the irreversible commitment of certain natural resources. The most notable significant irreversible impacts are the commitment of energy resources, in the form of natural gas and electricity, the increased generation of pollutants, and the short-term commitment of non-renewable and/or slowly renewable natural and energy resources, mineral resources, and water resources for development throughout the Specific Plan area.

Development as a result of the Specific Plan will use substantial natural resources, both during and after construction. During construction, fossil fuels and building materials (e.g., wood and aggregate) will be consumed. As the construction of specific projects is completed, employee and resident vehicle use, heating and cooling of buildings, and generation of electricity will consume fossil fuels. The use of these resources is an unavoidable consequence of development. The magnitude of this use will be offset partially by required compliance with Title 24 and other energy conservation measures.

Chapter IV contains a complete discussion of the impacts of development under the Specific Plan on specific environmental resources.

B. SIGNIFICANT AND UNAVOIDABLE EFFECTS

According to CEQA Guidelines (Section 15126, subd. [b]; Section 21000, subd. [b]), an EIR must include a description of those impacts identified as significant and unavoidable, should the proposed action be implemented. These impacts are unavoidable because it has been determined that either no mitigation, or only partial mitigation, is feasible. This section identifies significant impacts that cannot be eliminated or reduced to a less-than-significant level by mitigation measures imposed by the City.

The unavoidable environmental impacts that will result from implementation of the South Merced Specific Plan include the following:

- Increase in the amount of air pollution in the project area;
- Traffic congestion below Level of Service D at:
  - East 15th Street between D Street and B Street,
  - East 13th Street between G Street and SR 59,
  - SR 99 / SR 59 interchange,
  - G Street north of 13th Avenue, and
  - D Street across the UPRR;
- Conversion of agricultural lands;

- Promotion of Economic Growth; and
- Elimination of Obstacles to Population Growth.

This Chapter presents the comparative evaluation required by CEQA. Table VIII-1 presents a qualitative comparison of environmental impacts between Alternative 1, the No Project Alternative, and Alternative 2, Low-Density Residential Development. Further information is presented below.

A. ALTERNATIVE 1 – NO PROJECT

When the project is the revision of an existing land use or regulatory plan, policy or ongoing operation, the "no project" alternative will be the continuation of the existing plan, policy or operation into the future. Typically this is a situation where other projects initiated under the existing plan will continue while the new plan is developed. Thus, the projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan.

The “No Project” Alternative is the continuation of the existing General Plan. The projected impacts of the proposed plan or alternative plans will be compared to the impacts that would occur under the existing plan.

After defining the No Project Alternative using one of these approaches, the analyses of possible impacts of the No Project Alternative was conducted by projecting what could reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

These changes would result in lower employment opportunities within the South Merced area, which might increase the distance traveled by local residents to their place of employment. Traffic congestion would be reduced at major intersections. The visual character of undeveloped land might remain consistent with existing conditions. Little medium-density and no high-density housing developments would take place. Impacts on schools, public services and facilities, and utilities would be less than for the South Merced Specific Plan land-use concept.

The “No-Project” Alternative is the environmentally superior alternative.

B. Alternative 2 – Low-Density Residential Development

The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making

Alternative 2 would reduce the amount of acreage designated for Commercial Office (from 13 to 3 acres), Residential Medium Density (from 89 to 28 acres), Regional Commercial (from 41 to none) High Density Residential (from 117 to none), and Industrial (from 351 to 273). At the same time, it would increase acreage available for Neighborhood Commercial (from 20 to 45 acres) and Residential Low Density designations (from 989 to 1,266 acres). These changes

would result in lower employment opportunities within the South Merced area, which might increase the distance traveled by local residents to their place of employment. Traffic congestion would be reduced at major intersections. The visual character of undeveloped land might remain consistent with existing conditions. Little medium-density and no high-density housing developments would take place. Impacts on schools, public services and facilities, and utilities would be less than for the South Merced Specific Plan land-use concept.

The reduced density project alternative would reduce the density of development, thereby reducing the traffic and air quality impacts through reduced motor vehicle trips being generated by the project.

Comparing the significant effects of the proposed project to Alternative 2, anticipated impacts to traffic and air quality would be reduced, given the overall reduction in scale of the project. Although less than the impacts from the Specific Plan, the traffic increase would still require traffic improvements. The vehicle emissions would still surpass the threshold set by the SJVAPCD and would still be considered a significant air quality impact, though to a lesser degree than the proposed project. Although the reduction in air quality and traffic impacts from the Specific Plan would be reduced, overall, continued development in South Merced at a lower density would require additional land for the city to accommodate the projected population anticipated in the General Plan. Developing at a lower density would generate an increase, in motor vehicle trips, over development at the proposed density, negating any short-term air quality improvement.

If the overall scope of the project is reduced in this way, it will not be possible to develop the project as proposed. This would fail to achieve one of the primary objectives of the project from the City's perspective which is create dense neighborhood-based development, and would achieve something less than the property's full development potential. With respect to the City's objectives of developing the project at higher densities than currently planned, requiring less dense development would be in direct conflict with the city's objective. Less dense development also would reduce the ability to develop more pedestrian-friendly neighborhoods and transit-oriented development. Furthermore, since this reduced project alternative would not, overall, avoid or substantially reduce environmental impacts when compared to the project as proposed, and since it would be much less effective in achieving the project objectives, it is not being pursued.

Figure VIII-1 presents the land-use alternative concept.

TABLE VIII-1

Comparison of Environmental Impacts for No Project (Alternative 1) and Low-Density Residential Development (Alternative 2)

Impact	Alternative 1	Alternative 2	Comments
Air Quality	-	-	Although fewer dwelling units proposed under Alternative 2 results in approximately half the traffic because of the mix of land uses and inclusion of alternative forms of transportation.
Biological Resources	-	0	Same acreage of biological resources impacted under each Alternative and the project.
Cultural Resources	-	0	Same acreage of cultural resources impacted under each Alternative and the project.
Hazards and Hazardous Materials	-	-	Not a significant impact under any Alternative or the project.
Land Use and Planning	0	+	Project would proceed under the City of Merced General Plan, with corresponding unresolved issues in land use conflicts such as residential uses in sensitive airport influence zones and lack of commercial services for residents.
Noise	-	0	Although fewer dwelling units in Alternative 2, the amount of traffic on roads is assumed to exceed threshold resulting in same noise impacts from traffic.
Transportation/Traffic	0	-	Under Alternative 1 – no project, the project would proceed under the existing General Plan. Greater regional commercial land base would create more traffic in sensitive areas.
Public Services and Facilities, Utilities, and Recreation	-	-	Fewer dwelling units in Alternative 2 correspond to lower population; less demand for services.
Agricultural Resources	-	0	Same acreage of agricultural resources impacted as the project.
Hydrology/Water Quality	-	-	Same acreage impacted under each Alternative as the project.
Aesthetics	-	-	Lower intensity of Alternative 2 would likely have fewer structures built, but the project would still involve development of urban uses. No aesthetic viewsheds would be affected and the existing visual character would remain similar to current conditions.

+ Impacts are more adverse, compared to the project, as proposed.
- Impacts are less adverse, compared to the project, as proposed.
0 Impacts are about the same as the project, as proposed.

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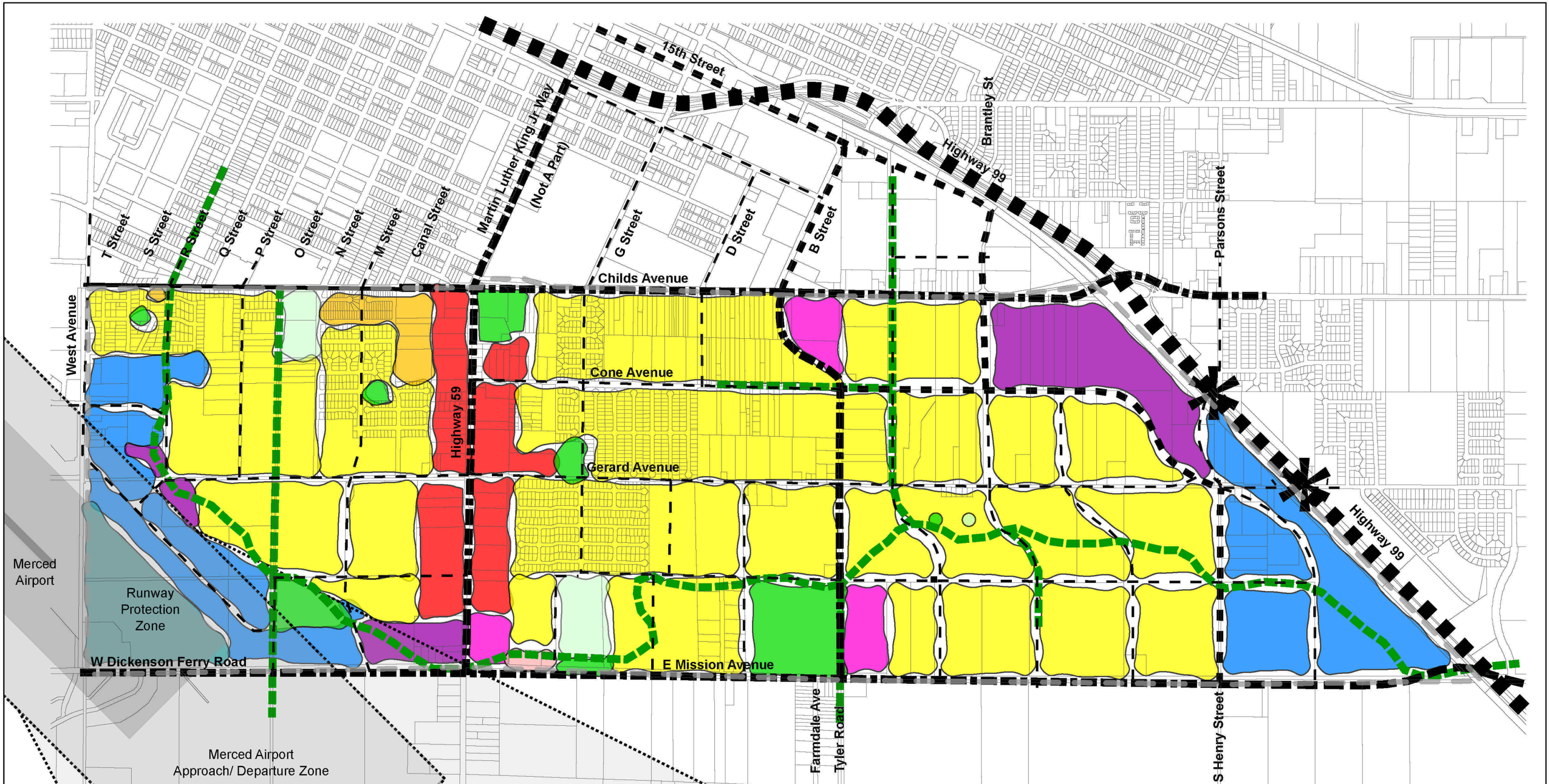

SOUTH MERCED SPECIFIC PLAN - LAND USE ALTERNATIVE CONCEPT

Figure VIII-1

Prepared map by permission of the City of Merced. 2005.

URS

December 2006

LEGEND

- Specific Plan Boundary
- Airport Flight Zone
- Linear Open Space / Pathway
- Agricultural
- Business Park
- Commercial - Regional Community
- Commercial - General
- Commercial - Neighborhood
- Commercial - Office
- Industrial
- Open Space / Park Recreation
- Residential - Low Density
- Residential - Low to Medium Density
- Residential - Village
- School
- Floating Park Site
- Floating School Site
- Highway 99
- Proposed Freeway Overpass
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector 2
- Local

N W E S

Not to Scale

A. RECIPIENTS OF NOTICE OF PREPARATION

(To be provided by City of Merced)

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APPENDIX A

AIR QUALITY EMISSIONS ESTIMATES

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 17325731
Project Title: South Merced SP EIR

Background Information
Nearest Air Monitoring Station measuring CO: 1034 S Minaret St, Turlock
Background 1-hour CO Concentration (ppm): 3.4
Background 8-hour CO Concentration (ppm): 2.3
Persistence Factor: 0.7 (CO Protocol Generalized Value for Urban Areas)
Analysis Year: 2007

Roadway Data
Intersection: SR-59 Ramps and Childs Avenue
Analysis Condition: Existing with Proposed Project Conditions

	Roadway Type	# of Lanes	Average Speed (mph)
North-South Roadway: SR-59	At Grade	4	5
East-West Roadway: Childs Avenue	At Grade	2	5

Highest Traffic Volumes (Vehicles per Hour, Assume 10% of Daily Volume per the CO protocol)
N-S Road: 3,010
E-W Road: 1,720

Roadway CO Contributions and Concentrations
Emissions = (A x B x C) / 100,000[1]

	A_1	A_2	A_3	B	C			
	Reference CO Concentrations			Traffic	Emission	Estimated CO Concentrations		
Roadway				Volume	Factors[2]	25 Feet	50 Feet	100 Feet
North-South Road	7.0	5.4	3.8	3,010	9.09	1.92	1.48	1.04
East-West Road	2.7	2.2	1.7	1,720	9.09	0.42	0.34	0.27

1 Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
2 Emission factors from EMFAC2007 (2006).for Merced County at 5 mph, 48 °F and 30% Relative Humidity. Emission factor used was for Light Duty Automobiles (LDA) because this is the most common type of vehicle in the county.

Total Roadway CO Concentrations
1-Hour Concentrations = North-South Concentration + East-West Concentration + Background 1-hour Concentration2
8-Hour Concentrations = ((1-Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration [3]

	1-Hour	8-Hour
25 Feet from Roadway Edge	5.7	3.9.
50 Feet from Roadway Edge	5.2	3.6
100 Feet from Roadway Edge	4.7	3.2

3. Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

District Recommended URBEMIS Construction Fleet
Construction Fleet Calculator

Applicant/Business Name:	City of Merced
Project Name:	South Merced Specific Plan
Project Location:	Merced County

1321.3	Total Acreage
330.33	Max Daily Disturbed

Construction Phase	Equipment Type	URBEMIS Value
Demolition	Rubber Tired Loader	33.03
Grading	Crawler Tractor	165.16
	Grader	33.03
	Off-Highway Truck	99.10
	Rubber Tired Loader	66.07
	Scraper	33.03
	Tractor/Loader/Backhoe	66.07
Building Construction	Other Equipment	99.10
Asphalt	Paver	33.03
	Roller	33.03

To use this spreadsheet:

1. Use this spreadsheet if you do not know specifics of the construction fleet and activity for the construction of your project and want to perform and emissions analysis. The District will use this spreadsheet to calculate construction emissions unless other information is provided.
2. Enter the total acreage to be disturbed in the construction of your project.
3. Print this sheet.
4. Enter the "URBEMIS Value" amounts into the corresponding construction phase of URBEMIS.
   A. In the Construction Emissions Module, click on the corresponding Construction Phase.
   B. Locate the "Equip Exhaust" tabs.
   C. Type the "URBEMIS Value" into the "Total #" field of the "Equip Exhaust" Tab.
   Note: Some values may not be whole numbers. Enter in the exact value, even if not a whole number
5. Do NOT change the default construction length in URBEMIS.

Central Regional Office: 1990 East Gettysburg Avenue Fresno, CA 93726-0244

TEL (559) 230-5800 FAX (559) 230-6064

Version 1.1
Revised: May 17, 2006

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\South Merced Specific Plan-Construction.ur
Project Name: South Merced Specific Plan-Construction Analysis
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Tons/Year)

CONSTRUCTION EMISSION ESTIMATES

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	67.47	441.93	559.87	0.01	257.58	17.73	239.85
TOTALS (tpy, mitigated)	67.47	353.73	559.87	0.01	30.74	3.57	27.17

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	29.15	198.23	233.26	0.00	8.82	8.44	0.38
TOTALS (tpy, mitigated)	29.15	158.80	233.26	0.00	2.08	1.70	0.38

*** 2009 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	29.07	188.01	241.18	0.00	8.27	7.89	0.38
TOTALS (tpy, mitigated)	29.07	150.65	241.18	0.00	1.97	1.59	0.38

*** 2010 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	28.80	177.69	244.42	0.00	7.46	7.08	0.38
TOTALS (tpy, mitigated)	28.80	142.34	244.42	0.00	1.81	1.43	0.38

*** 2011 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	32.12	177.72	245.00	0.00	7.47	7.08	0.39
TOTALS (tpy, mitigated)	32.12	142.37	245.00	0.00	1.82	1.43	0.39

*** 2012 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	69.88	87.74	129.93	0.00	3.64	3.32	0.32
TOTALS (tpy, mitigated)	69.88	70.36	129.93	0.00	1.00	0.68	0.32

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\South Merced Specific Plan-Construction.ur
Project Name: South Merced Specific Plan-Construction Analysis
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Tons/Year)

Construction Start Month and Year: June, 2007
Construction Duration: 60
Total Land Use Area to be Developed: 1321.33 acres
Maximum Acreage Disturbed Per Day: 330.3 acres
Single Family Units: 3964 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 0

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (tons/year)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	239.80	-	239.80
Off-Road Diesel	65.82	434.12	536.98	-	17.39	17.39	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.66	0.85	15.21	0.01	0.07	0.03	0.04
Total tons/year	66.48	434.97	552.19	0.01	257.26	17.42	239.84
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.91	6.91	6.70	-	0.31	0.31	0.00
Bldg Const Worker Trips	0.08	0.05	0.98	0.00	0.01	0.00	0.01
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.99	6.96	7.68	0.00	0.32	0.31	0.01
Total all phases tons/yr	67.47	441.93	559.87	0.01	257.58	17.73	239.85
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	27.15	197.13	208.27	-	8.42	8.42	0.00
Bldg Const Worker Trips	2.00	1.10	24.99	0.00	0.40	0.02	0.38
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	29.15	198.23	233.26	0.00	8.82	8.44	0.38
Total all phases tons/yr	29.15	198.23	233.26	0.00	8.82	8.44	0.38

*** 2009***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	27.15	186.82	215.87	-	7.87	7.87	0.00
Bldg Const Worker Trips	1.92	1.19	25.31	0.00	0.40	0.02	0.38
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	29.07	188.01	241.18	0.00	8.27	7.89	0.38
Total all phases tons/yr	29.07	188.01	241.18	0.00	8.27	7.89	0.38

*** 2010***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	27.15	176.77	223.20	-	7.06	7.06	0.00
Bldg Const Worker Trips	1.65	0.92	21.22	0.00	0.40	0.02	0.38
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	28.80	177.69	244.42	0.00	7.46	7.08	0.38
Total all phases tons/yr	28.80	177.69	244.42	0.00	7.46	7.08	0.38

*** 2011***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	27.15	176.77	223.20	-	7.06	7.06	0.00
Bldg Const Worker Trips	1.65	0.92	21.22	0.00	0.40	0.02	0.38
Arch Coatings Off-Gas	3.28	-	-	-	-	-	-
Arch Coatings Worker Trips	0.04	0.03	0.58	0.00	0.01	0.00	0.01
Asphalt Off-Gas	0.00	-	-	-	-	-	-

Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	32.12	177.72	245.00	0.00	7.47	7.08	0.39
Total all phases tons/yr	32.12	177.72	245.00	0.00	7.47	7.08	0.39

*** 2012***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	11.31	73.65	93.00	-	2.94	2.94	0.00
Bldg Const Worker Trips	0.70	0.40	9.01	0.00	0.17	0.01	0.16
Arch Coatings Off-Gas	54.71	-	-	-	-	-	-
Arch Coatings Worker Trips	0.70	0.40	9.01	0.00	0.17	0.01	0.16
Asphalt Off-Gas	0.23	-	-	-	-	-	-
Asphalt Off-Road Diesel	2.19	12.72	18.65	-	0.35	0.35	0.00
Asphalt On-Road Diesel	0.03	0.56	0.13	0.00	0.02	0.01	0.00
Asphalt Worker Trips	0.01	0.01	0.13	0.00	0.00	0.00	0.00
Total tons/year	69.88	87.74	129.93	0.00	3.64	3.32	0.32
Total all phases tons/yr	69.88	87.74	129.93	0.00	3.64	3.32	0.32

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '07
Phase 2 Duration: 6.6 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
165	Crawler Tractors	143	0.575	8.0
33	Graders	174	0.575	8.0
99	Off Highway Trucks	417	0.490	8.0
66	Rubber Tired Loaders	165	0.465	8.0
33	Scrapers	313	0.660	8.0
66	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Dec '07
Phase 3 Duration: 53.4 months
Start Month/Year for SubPhase Building: Dec '07
SubPhase Building Duration: 53.4 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
99	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '11
SubPhase Architectural Coatings Duration: 5.3 months
Start Month/Year for SubPhase Asphalt: Mar '12
SubPhase Asphalt Duration: 2.7 months
Acres to be Paved: 177.6
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
33	Pavers	132	0.590	8.0
33	Rollers	114	0.430	8.0

CONSTRUCTION EMISSION ESTIMATES MITIGATED (tons/year)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00

Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	27.12	-	27.12
Off-Road Diesel	65.82	347.30	536.98	-	3.48	3.48	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.66	0.85	15.21	0.01	0.07	0.03	0.04
Total tons/year	66.48	348.15	552.19	0.01	30.67	3.51	27.16
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.91	5.53	6.70	-	0.06	0.06	0.00
Bldg Const Worker Trips	0.08	0.05	0.98	0.00	0.01	0.00	0.01
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.99	5.58	7.68	0.00	0.07	0.06	0.01
Total all phases tons/yr	67.47	353.73	559.87	0.01	30.74	3.57	27.17

*** 2008***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	27.15	157.70	208.27	-	1.68	1.68	0.00
Bldg Const Worker Trips	2.00	1.10	24.99	0.00	0.40	0.02	0.38
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	29.15	158.80	233.26	0.00	2.08	1.70	0.38
Total all phases tons/yr	29.15	158.80	233.26	0.00	2.08	1.70	0.38

*** 2009***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	27.15	149.46	215.87	-	1.57	1.57	0.00
Bldg Const Worker Trips	1.92	1.19	25.31	0.00	0.40	0.02	0.38
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	29.07	150.65	241.18	0.00	1.97	1.59	0.38
Total all phases tons/yr	29.07	150.65	241.18	0.00	1.97	1.59	0.38

*** 2010***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	27.15	141.42	223.20	-	1.41	1.41	0.00
Bldg Const Worker Trips	1.65	0.92	21.22	0.00	0.40	0.02	0.38
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	28.80	142.34	244.42	0.00	1.81	1.43	0.38
Total all phases tons/yr	28.80	142.34	244.42	0.00	1.81	1.43	0.38

*** 2011***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	27.15	141.42	223.20	-	1.41	1.41	0.00
Bldg Const Worker Trips	1.65	0.92	21.22	0.00	0.40	0.02	0.38
Arch Coatings Off-Gas	3.28	-	-	-	-	-	-
Arch Coatings Worker Trips	0.04	0.03	0.58	0.00	0.01	0.00	0.01
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	32.12	142.37	245.00	0.00	1.82	1.43	0.39
Total all phases tons/yr	32.12	142.37	245.00	0.00	1.82	1.43	0.39

*** 2012***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	11.31	58.92	93.00	-	0.59	0.59	0.00
Bldg Const Worker Trips	0.70	0.40	9.01	0.00	0.17	0.01	0.16
Arch Coatings Off-Gas	54.71	-	-	-	-	-	-
Arch Coatings Worker Trips	0.70	0.40	9.01	0.00	0.17	0.01	0.16
Asphalt Off-Gas	0.23	-	-	-	-	-	-
Asphalt Off-Road Diesel	2.19	10.18	18.65	-	0.07	0.07	0.00
Asphalt On-Road Diesel	0.03	0.45	0.13	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.01	0.01	0.13	0.00	0.00	0.00	0.00
Total tons/year	69.88	70.36	129.93	0.00	1.00	0.68	0.32
Total all phases tons/yr	69.88	70.36	129.93	0.00	1.00	0.68	0.32

Construction-Related Mitigation Measures

Phase 2: Soil Disturbance: Apply soil stabilizers to inactive areas
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Soil Disturbance: Replace ground cover in disturbed areas quickly
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 15.0%)
Phase 2: Soil Disturbance: Water exposed surfaces - 3x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 50.0%)
Phase 2: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 2: Off-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 2: On-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 2: On-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 2: Stockpiles: Cover all stock piles with tarps
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 9.5%)
Phase 2: Unpaved Roads: Water all haul roads 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 40.0%)
Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: Off-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 3: Off-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: Off-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 3: On-Road Diesel Exhaust: Use diesel particulate filter
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 80.0%)
Phase 3: On-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '07
Phase 2 Duration: 6.6 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
165	Crawler Tractors	143	0.575	8.0
33	Graders	174	0.575	8.0
99	Off Highway Trucks	417	0.490	8.0
66	Rubber Tired Loaders	165	0.465	8.0
33	Scrapers	313	0.660	8.0
66	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Dec '07
Phase 3 Duration: 53.4 months
Start Month/Year for SubPhase Building: Dec '07
SubPhase Building Duration: 53.4 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
99	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '11
SubPhase Architectural Coatings Duration: 5.3 months
Start Month/Year for SubPhase Asphalt: Mar '12
SubPhase Asphalt Duration: 2.7 months
Acres to be Paved: 177.6

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
33	Pavers	132	0.590	8.0
33	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.00602
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0116
Phase 2 mitigation measure Soil Disturbance: Apply soil stabilizers to inactive areas
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Replace ground cover in disturbed areas quickly
has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 3x daily
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst
has been changed from off to on.
Phase 2 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 2 mitigation measure On-Road Diesel Exhaust: Use lean-NOx catalyst
has been changed from off to on.
Phase 2 mitigation measure Stockpiles: Cover all stock piles with tarps
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Water all haul roads 2x daily
has been changed from off to on.
Phase 2 mitigation measure Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst
has been changed from off to on.
Phase 3 mitigation measure On-Road Diesel Exhaust: Use diesel particulate filter
has been changed from off to on.
Phase 3 mitigation measure On-Road Diesel Exhaust: Use lean-NOx catalyst
has been changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\South Merced Specific Plan.urb
Project Name: South Merced Specific Plan
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	126.95	39.58	284.01	0.99	39.87

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	247.31	264.32	2,623.05	1.48	128.82

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	374.26	303.90	2,907.07	2.47	168.69

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\South Merced Specific Plan.urb
Project Name: South Merced Specific Plan
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES (Tons per Year, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	2.58	34.72	23.65	0.00	0.06
Hearth	30.40	4.77	243.58	0.79	39.73
Landscaping	2.56	0.09	16.79	0.19	0.07
Consumer Prdcts	58.22	-	-	-	-
Architectural Coatings	33.19	-	-	-	-
TOTALS (tpy, unmitigated)	126.95	39.58	284.01	0.99	39.87

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Low and Medium Density Re	78.68	93.81	935.98	0.54	46.74
Village/High Denisty Resi	21.00	24.03	239.71	0.14	11.97
Elementary school	1.92	1.15	11.35	0.01	0.55
Junior high school	3.66	2.56	25.10	0.01	1.23
Regional Commercial	20.07	20.12	195.72	0.11	9.50
Neighborhood Commercial	12.91	12.52	123.04	0.07	5.76
Service/Highway Commercia	26.68	15.30	156.37	0.07	6.21
Business park	42.70	45.36	449.25	0.26	22.47
Medical office building	7.78	8.19	79.81	0.04	3.91
Industrial park	31.91	41.28	406.73	0.23	20.48
TOTAL EMISSIONS (tons/yr)	247.31	264.32	2,623.05	1.48	128.82

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2008 Season: Annual

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Low and Medium Density Re	1,587.00	9.57 trips/dwelling unit	4,761.00	45,563.01
Village/High Denisty Resi	110.00	6.63 trips/dwelling unit	1,760.00	11,668.99
Elementary school		1.29 trips/students	600.00	774.00
Junior high school		1.62 trips/students	1,000.00	1,620.00
Regional Commercial		8.26 trips/1000 sq. ft.	1,777.23	14,687.95
Neighborhood Commercial		11.94 trips/1000 sq. ft.	862.48	10,296.04
Service/Highway Commercia		3.44 trips/1000 sq. ft.	5,379.62	18,525.25
Business park		4.59 trips/1000 sq. ft.	5,083.41	23,339.98
Medical office building		9.64 trips/1000 sq. ft.	583.70	5,627.97
Industrial park		60.00 trips/acres	355.50	21,330.00
		Sum of Total Trips		153,433.20
		Total Vehicle Miles Traveled		939,742.47

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.72	1.60	98.00	0.40
Light Truck < 3,750 lbs	22.04	2.70	95.30	2.00
Light Truck 3,751- 5,750	16.26	1.20	97.50	1.30
Med Truck 5,751- 8,500	6.35	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	0.17	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.05	0.00	50.00	50.00
Med-Heavy 14,001-33,000	0.73	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.59	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.11	0.00	50.00	50.00
Motorcycle	1.35	76.50	23.50	0.00
School Bus	0.02	0.00	0.00	100.00
Motor Home	0.61	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Elementary school	20.0	10.0	70.0
Junior high school	20.0	10.0	70.0
Regional Commercial	2.0	1.0	97.0
Neighborhood Commercial	2.0	1.0	97.0

Service/Highway Commercial	2.0	1.0	97.0
Business park	48.0	24.0	28.0
Medical office building	7.0	3.5	89.5
Industrial park	41.5	20.8	37.8

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/1587. to 9.57005/1587.
The Trip Rate and/or Acreage values for Apartments low rise
have changed from the defaults 6.9/110. to 6.63011/110.

Changes made to the default values for Area

The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.00602.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0116.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The light auto percentage changed from 55.0 to 51.72.
The light truck < 3750 lbs percentage changed from 15.0 to 22.04.
The light truck 3751-5750 percentage changed from 16.2 to 16.26.
The med truck 5751-8500 percentage changed from 7.2 to 6.35.
The lite-heavy truck 8501-10000 percentage changed from 1.1 to 0.17.
The lite-heavy truck 10001-14000 percentage changed from 0.4 to 0.05.
The med-heavy truck 14001-33000 percentage changed from 1.0 to 0.73.
The heavy-heavy truck 33001-60000 percentage changed from 0.9 to 0.59.
The urban bus percentage changed from 0.2 to 0.11.
The motorcycle percentage changed from 1.7 to 1.35.
The school bus percentage changed from 0.1 to 0.02.
The motorhome percentage changed from 1.2 to 0.61.
The operational emission year changed from 2005 to 2008.
The paved road silt loading factor changed from 0.1 to .031.

APPENDIX B

BIOLOGICAL TECHNICAL REPORT FOR THE SOUTH MERCED SPECIFIC PLAN

Biological Technical Report for the South Merced Specific Plan

Merced, California

Prepared for:

The City of Merced
678 West 18th Street
Merced, CA 95340

Prepared by:

URS Corporation
2020 East First Street, Suite 400
Santa Ana, CA 92705

URS Job No. 17325731.30000

March 15, 2007

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ACRONYMS AND ABBREVIATIONS

BTR	Biological Technical Report
CDFG	California Department of Fish and Game
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CNPSEI	California Native Plant Society Electronic Inventory
CWA	Clean Water Act
m	meter
mph	miles per hour
SM	South Merced
SP	Specific Plan
SR	State Route
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 Summary

This Biological Technical Report (BTR) presents the findings of a survey conducted by URS Corporation (URS) biologists Ken McDonald and Paul Brenner on November 29 and 30, 2006, within the City of Merced in Merced County, California. The South Merced Specific Plan (SP) "study area" encompasses approximately 2,052 acres in the City of Merced (Figure 1). For the purpose of this document, the "study area" is defined as the potential South Merced Specific Plan Area. The intended use of this BTR is to disclose and evaluate the on-site habitat conditions, and determine the potential for occurrence, of local, state, or federally protected wildlife/plant species and other special aquatic resources within the study area limits.

During biological reconnaissance surveys, two special-status species, the burrowing owl (two individuals) and the northern harrier (one individual), were observed within the study area. Furthermore, potential Clean Water Act (CWA) and California Department of Fish and Game (CDFG) Code 1600 (et seq.) jurisdictional features were identified within the study area (e.g., agricultural ditches and marsh habitats). Although most of the study area is actively farmed, several agricultural fields have been left fallow, and portions of these areas (e.g., Merced's regional irrigation canal network) have the potential to support diverse local, state, or federally protected wildlife/plant species and other special aquatic resources. As a result, in certain circumstances, subsequent projects will be obligated to conduct surveys and implement specific avoidance, minimization, and mitigation measures to compensate for adverse impacts to these resources.

2.0 Study Area Description

2.1 STUDY AREA

The South Merced Specific Plan study area encompasses approximately 2,052 acres in the City of Merced in Merced County, California (Figure 1). The study area is located within the confines of four United States Geological Survey (USGS) 7.5-minute quadrangles, including Atwater, El Nido, Merced, and Sandy Mush. For the purpose of this document, the study area is defined as the potential South Merced Specific Plan area and is bounded by Childs Avenue on the north, State Route (SR) 99 on the east, Mission Avenue/ Dickenson Ferry Road on the south, and West Avenue and the Merced Airport on the west (Figure 2). The land use within the study area is primarily agricultural. In addition to both active and inactive agricultural fields, land uses associated with the study area include irrigation canals, residential tract homes, scattered residential dwellings, and miscellaneous ancillary structures associated with farming.

2.2 SURROUNDING AREA

The study area is on the eastern side of the San Joaquin Valley. Land use adjacent to the study area is primarily agricultural (including orchards, dairies, fallow properties, and crops), with residential and commercial enterprises generally in the vicinity of Childs Avenue and SR 59. Regionally, typical habitat types include annual grasslands, irrigated pasture and croplands, oak woodlands, vernal pool and swale complexes, seasonal seeps and marshes, stock ponds, riparian forest and scrub, perennial streams, and scattered areas of ruderal vegetation, though it is important to note that several of these types are not located within the planning area. These habitat types provide a diverse setting for plants and animals within the region and important landscape linkages in Merced County. The landscape linkages facilitate the movement and dispersal of substantial numbers wildlife and plant species and connect large blocks of natural open space essential for the long-term viability of regional plant and wildlife.

2.3 FUTURE PLANS FOR THE STUDY AREA

The City of Merced proposes to develop specific land uses within the study area (an area that is synonymous with the limits of the South Merced Specific Plan area). The proposed project footprint is referred to as the South Merced Specific Plan study area. According to the Merced Vision 2015 General Plan (City of Merced, 1997a) (Merced General Plan) the study area could benefit from improved neighborhood conditions, economic development, more defined land uses, coordinated infrastructure improvements, and expanded services. The South Merced Strategic Plan, adopted by the Merced City Council on January 20, 2004 (City of Merced, 2003), describes the community's vision for the future of the South Merced area and outlines strategic implementation actions for achieving that vision. The Strategic Plan serves as the fundamental policy basis for the South Merced Specific Plan.

3.0 Methods

In summary, the following methods were used to evaluate on-site habitat conditions and the presence of CWA and CDFG Code 1600 (et seq.) jurisdictional features and to determine the potential for occurrence of local, state, and federally protected (i.e., special-status[1]) species within the study area limits. Database queries and literature reviews were used to assess the potential for occurrence of special-status species, while topographic and USGS 7.5-minute quadrangle maps were assessed for special aquatic resources. Field surveys were conducted on November 29 and 30, 2006, by URS wildlife biologist and wetlands scientist Paul Brenner and botanist Ken McDonald.

3.1 BIOLOGY

Before beginning the field survey, available information was reviewed from resource management plans and other documents to determine the locations and types of biological resources that have the potential to exist in the study area (CDFG, 2006; California Native Plant Society [CNPS], 2006). The California Natural Diversity Database (CNDDB) (CDFG, 2006) was queried for records of special-status species and habitats according to the U. S. Fish and Wildlife Service (USFWS), CNPS, CDFG, and others. USGS 7.5-minute topographic quadrangle maps for Atwater, El Nido, Merced, and Sandy Mush were evaluated. The California Native Plant Society Electronic Inventory (CNPSEI) of rare and endangered plants was queried for the same quadrangles. Species lists generated from analyses were refined based on literature reviews, informal consultation with resource specialists, and field surveys of the study area.

Areas surveyed for biological resources varied depending on the wildlife and plant species being evaluated; botanical assessments were limited to the South Merced Specific Plan footprint, while evaluations of noise-sensitive birds (e.g., passerines and raptors) extended out 304.8 meters (m) (1,000 feet) from the study area footprint, as prescribed by resource agencies for similar projects. Where access to the entire study area was not possible as a result of private property or physical barriers, observations were made from the nearest appropriate vantage points with binoculars or using aerial photographs to verify and document the presence or absence of individual wildlife and plant species or their habitats. Driving and pedestrian reconnaissance surveys were performed to qualitatively assess community characteristics and species present in different habitat types. All representative habitats surveyed were assessed for native habitat, potential to support special-status species, CWA and CDFG Code 1600 (et seq.) jurisdictional features, and distributions of communities.

Vegetation classifications of plant communities in the study area were derived from the criteria and definitions of Holland (1986) and Sawyer and Keeler-Wolf (1995). Surveys noted general vegetation types, species present within different communities, habitat types, and plant population sizes. Scientific and common botanical species names were recorded according to *The Jepson Manual: Higher Plants of California* (Hickman, 1993). Plants were identified to the lowest taxonomic level sufficient to determine whether the species observed were non-native,

[1] For the purposes if this analysis, the term "special-status," excludes those avian species identified under Section 10 of the Migratory Bird Treaty Act.

common, or special status[2]. Plants of uncertain identity were collected and subsequently identified from keys (Hickman, 1993, and Munz, 1974), and descriptions were provided using the nomenclature of Hickman (1993).

Wildlife (birds, mammals, amphibians, and reptiles) were observed in the study area and surrounding areas. The presence of a wildlife species was based on direct observation, wildlife sign (i.e., tracks, burrows, nests, scat, etc.), or vocalization[3]. Field data compiled for wildlife included the species observed, scientific name, common name, habitat, and evidence of presence when no direct observations were made. Wildlife nomenclature, common names, and habitat information follow Hall (1981), Ingles (1965), Jennings and Hayes (1994), Alsop (2001), Sibley (2000), and Stebbins (1985).

3.2 POTENTIAL CWA AND CDFG CODE 1600 (ET SEQ.) JURISDICTIONAL FEATURES

Before beginning the field surveys, a topographic map and USGS maps were examined to determine the locations of potential areas of CWA Section 404, 401, and CDFG Code 1600 (et seq.) jurisdiction. Areas suspected of being jurisdictional (e.g., wetlands or waters of the United States or waters of the State) were assessed by visual observation in the field. Potential jurisdictional areas were evaluated by determining the presence of definable channels and/or hydrophytic vegetation, riparian habitat, and hydrologic regime[4].

[2] Plant surveys did not coincide with known flowering periods of local special-status plant species (CNPS, 2006); additional local areas were not evaluated for variation in flowering phenology of known special-status plant populations before initiating surveys.

[3] Wildlife surveys were not intended to substitute for focused presence/absence surveys and were not conducted pursuant to USFWS, CDFG, or U.S. Forest Service (USFS) established protocols.

[4] This evaluation is not intended to meet the substantive provisions of CWA Section 404, 401 and CDFG Code 1600 (et seq.). Suspected jurisdictional habitats were not delineated pursuant to U.S. Army Corps of Engineers (USACE) *Wetland Delineation Manual* (USACE, 1987) or the guidance described in *A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607* (Environmental Services Division, 1994)

4.0 RESULTS

The following section illuminates on-site habitat conditions, the potential for occurrence of local, state, and federally protected wildlife/plant species, and potential areas of CWA Section 404, 401, and CDFG Code 1600 (et seq.) jurisdiction within the study area. Weather conditions at the time of the survey were clear, and winds ranged from 1 to 5 miles per hour (mph).

4.1 LAND USE AND VEGETATION COMMUNITIES

The study area currently consists primarily of developed and agricultural land uses. Open areas that are not currently being used for agriculture have become fallow and have begun the process of reverting to vernal marshes. Only one isolated riparian area occurs within the south-central portion of the study area, at the northern terminus of Mather Road. Vegetation communities and developed areas observed within the study area are detailed in Table 1; Figure 3 shows vegetation communities and drainages.

TABLE 1

Study Area Land Use and Vegetation Communities[5]

Vegetation Type	Approximate Area (acres)	Description
Developed	1,048.5	Residential, commercial, industrial, infrastructure, and other anthropogenic uses
Agricultural	877.1	Orchards, row crops, dairies
Fallow	70.6	Abandoned or fallow agricultural land
Riparian	9.7	River, stream, reservoir, pond, spring, marsh, bog, meadow, and vegetated portions of Merced's regional irrigation canal network
Vernal Marsh	73.0	Low-growing, native hydrophytes with non-natives
Approximate Total Area	2,079	

4.1.1 Developed

Developed areas include residential, commercial, industrial, schools, parks, and infrastructure (involving power lines, roads, highways, and railroad rights-of-way, Merced's regional irrigation canal network and ancillary buildings). Residential areas ranged from low-density isolated houses on large parcels of land (usually with maintained ornamental landscaping or unused land) to high-density areas in housing tracts. Developed areas were under active use and were generally void of vegetation, except for ornamental landscaping (see Photographs 3 through 6, 8, and 9 in Figure 4).

[5] Approximate land-use areas were determined by digital analysis of aerial photographs complemented with ground verification of a representative number of vegetative community characteristics in November 2006. This analysis provides a relative measure of usage rather than an exact measure. Furthermore, the digital analysis "total area" calculation underestimated the known acreage of the study area by 6 acres.

4.1.2 Agriculture

Agriculture generally consists of annual crops, orchards, vineyards, dairies, and stockyards. Agriculture in the study area consists of irrigated fruit and nut orchards and row crops. These areas were generally well maintained but occasionally exhibited plant species commonly found in disturbed areas, as described (see Photograph 2 in Figure 4

4.1.3 Fallow

Fallow areas generally occur on sites associated with inactive agricultural areas that have been left untilled. Fallow areas are typically characterized by frequently disturbed soils and are occasionally devoid of vegetation or possess sparse cover. Plant species that occur in ruderal communities readily colonize disturbed ground, and consequently are common in fallow areas. Fallow areas within the site exhibited varying degrees of past surface disturbance. Plant species that occur in these areas typically include bull thistle (*Cirsium vulgare*), black mustard (*Brassica nigra*), milk thistle (*Silybum marianum*), and Russian thistle (*Salsola tragus*) as well as non-native annual grasses, such as brome grasses (*Bromus* spp.). In addition, fallow areas occasionally possessed vegetation typical of vernal marsh habitat (see Photograph 1 in Figure 4).

4.1.4 Vernal Marsh

Vernal marshes are characterized by low growth, mostly consisting of annual herbs, with occasional taller herbaceous riparian species. The growing season varies with water input and is usually dry by late summer. Vernal marshes are similar to vernal pools but are larger and generally less ephemeral; they share similar species, which flower behind the edge of the retreating water line (Holland, 1986). Vernal marshes observed within the project area occurred in fallow agricultural fields that appeared to have been disturbed by past mechanical activities, such as tilling (see Photograph 1 in Figure 4). Within study-site marshes, the most common species observed were water clover (*Marsilea* sp.) and sedge (*Scirpus* sp.).

4.1.5 Riparian

Riparian areas within the study area consisted of tall winter-deciduous cottonwoods associated with wet areas. This type of vegetation association generally occupies broader drainages or floodplains of permanent streams and rarely forms closed canopies. It may also appear as a stand of scattered trees within a matrix of species, such as willows and other shrubby species. This riparian habitat is equivalent to Holland's (1986) southern sycamore-alder riparian woodland habitat type, with the exception that white alder (*Alnus rhombifolia*) does not occur within this association in the study area. The understory component of this woodland habitat type consists primarily of forbs and nonnative grasses, with shrub species accounting for only a small portion of the cover. The prevalence of nonnative grasses and lack of woody understory species within the study area suggest that habitat at this location has been disturbed.

4.2 PLANTS

Vegetation observed within the study area consisted primarily of agricultural crops (orchards and row crops), ornamental landscaping, and disturbed areas dominated by ruderal vegetation (within developed areas, fallow agricultural areas, vernal marsh occurring within fallow agricultural areas, and riparian plant communities). A flora list is provided in Table 2. Photographs of representative habitat types supported on site are presented in Figure 4.

TABLE 2

Plant Species Observed within the Study Area

Scientific Name	Common Name
GYMNOSPERMS	
CUPRESSACEAE	**CYPRESS FAMILY**
Cupressus sempervirens	Italian cypress
Juniperus sp.	juniper
PINACEAE	**PINE FAMILY**
Pinus sp.	pine
TAXODIACEAE	**BALD CYPRESS FAMILY**
Sequoia sempervirens	California redwood
ANGIOSPERMS (DICOTYLEDONS)	
ACERACEAE	**MAPLE FAMILY**
Acer sp.	maple
ANACARDIACEAE	**SUMAC OR CASHEW FAMILY**
Pistacia vera	pistachio
Schinus terebinthifolius	Brazilian pepper tree
APOCYNACEAE	**DOGBANE FAMILY**
Nerium oleander	oleander
ARALIACEAE	**GINSENG FAMILY**
Hedera helix	English ivy
ASTERACEAE	**SUNFLOWER FAMILY**
Centaurea solstitialis	yellow star-thistle
Cirsium vulgare	bull thistle
Helianthus sp.	sunflower
Heterotheca sp.	telegraph weed
Lactuca serriola	prickly lettuce
Senecio vulgaris	common groundsel
Silybum marianum	milk thistle
Sonchus oleraceus	common sow thistle
BRASSICACEAE	**MUSTARD FAMILY**
Brassica sp.	mustard
CACTACEAE	**CACTUS FAMILY**
Opuntia sp.	prickly pear
CHENOPODIACEAE	**GOOSEFOOT FAMILY**
Salsola tragus	Russian thistle
CONVOLVULACEAE	**MORNING-GLORY FAMILY**
Convolvulus sp.	bindweed

TABLE 2 (Continued)

Plant Species Observed within the Study Area

Scientific Name	Common Name
EUPHORBIACEAE	**SPURGE FAMILY**
Ricinus communis	castor-bean
FABACEAE	**LEGUME FAMILY**
Acacia sp.	acacia
Robinia pseudoacacia	black locust
Trifolium sp.	clover
GERANIACEAE	**GERANIUM FAMILY**
Erodium sp.	erodium
Pelargonium sp.	garden geranium
JUGLANDACEAE	**WALNUT FAMILY**
Juglans regia	English walnut
LAMIACEAE	**MINT FAMILY**
Rosmarinus officinalis	rosemary
MALVACEAE	**MALLOW FAMILY**
Malva parviflora	cheeseweed
MORACEAE	**MULBERRY FAMILY**
Ficus carica	edible fig
Morus alba	white mulberry
MYRTACEAE	**MYRTLE FAMILY**
Eucalyptus sp.	gum tree
OLEACEAE	**OLIVE FAMILY**
Fraxinus sp.	ash
Ligustrum sinense	Chinese privet
Olea europaea	olive
PASSIFLORACEAE	**PASSION FLOWER FAMILY**
Passiflora sp.	passion flower
PITTOSPORACEAE	**TOBIRA FAMILY**
Pittosporum sp.	pittosporum
PLANTAGINACEAE	**PLANTAIN FAMILY**
Plantago sp.	plantain
PLATANACEAE	**SYCAMORE FAMILY**
Platanus racemosa	western sycamore
POLYGONACEAE	**BUCKWHEAT FAMILY**
Polygonum sp.	smartweed
Rumex crispus	curly dock
PROTEACEAE	**PROTEA FAMILY**
Grevillea robusta	silk oak
ROSACEAE	**ROSE FAMILY**
Malus sp.	apple
Prunus cerasifera	cherry plum
Prunus dulcis	almond
Prunus persica	peach
Pyracantha sp.	firethorn
Pyrus sp.	ornamental pear
Rosa sp.	ornamental rose
Rubus sp.	blackberry
RUTACEAE	**RUE FAMILY**

TABLE 2 (Continued)

Plant Species Observed within the Study Area

Scientific Name	Common Name
*Citrus limon**	lemon
Citrus sinensis	orange
SALICACEAE	**WILLOW FAMILY**
Populus sp.	cottonwood
Salix babylonica	weeping willow
SIMAROUBACEAE	**QUASSIA FAMILY**
Ailanthus altissima	tree of heaven
SOLANACEAE	**NIGHTSHADE FAMILY**
Nicotiana glauca	tree tobacco
TAMARICACEAE	**TAMARISK FAMILY**
Tamarix sp.	tamarisk
ULMACEAE	**ELM FAMILY**
Ulmus parvifolia	Chinese elm
URTICACEAE	**NETTLE FAMILY**
Urtica urens	dwarf nettle
VITACEAE	**GRAPE FAMILY**
Vitis vinifera	domestic grape
ANGIOSPERMS (MONOCOTYLEDONS)	
ARECACEAE	**PALM FAMILY**
Arecastrum romanzoffianum	queen palm
Phoenix canariensis	Canary Island date palm
Washingtonia filifera	California fan palm
Washingtonia robusta	Mexican fan palm
CANNACEAE	**CANNA FAMILY**
Canna generalis	canna
CYPERACEAE	**SEDGE FAMILY**
Cyperus sp.	sedge
Scirpus sp.	bulrush
JUNCACEAE	**RUSH FAMILY**
Juncus sp.	rush
LILIACEAE	**LILY FAMILY**
Agave sp.	agave
Aloe sp.	aloe
Hemerocallis sp.	day lily
Yucca elephantipes	giant yucca
MUSACEAE	**BANANA FAMILY**
Musa sp.	banana
POACEAE	**GRASS FAMILY**
Arundo donax	giant reed
Avena sp.	wild oat
Bromus diandrus	ripgut grass
Bromus tectorum	cheat grass
Distichlis spicata	saltgrass
TYPHACEAE	**CATTAIL FAMILY**
Typha sp.	cattail

4.3 WILDLIFE

Wildlife species detected within the study area included common bird and mammal species. Bird species detected included rock dove (*Columba livia),* yellow-billed magpie (*Pica nuttalli*), house sparrow (*Passer domesticus*), northern mockingbird *(Mimus polyglottos),* and American crow (*Corvus brachyrhynchos*). Mammal species detected on site included coyote *(Canis latrans*) and ground squirrel (*Spermophilus* sp.). A list of animal species detected during the survey within the study area is included in Table 3.

TABLE 3

Wildlife Observed within the Study Area

Scientific Name	Common Name
CLASS AVES	**BIRDS**
ARDEIDAE	**HERONS, BITTERNS**
Ardea alba	great egret
Nycticorax nycticorax	black-crowned night-heron
ANATIDAE	**DUCKS, GEESE, SWANS**
Anser domesticus	domestic goose
ACCIPITRIDAE	**HAWKS, KITES, EAGLES**
Circus cyaneus	northern harrier
PHASIANIDAE	**PARTRIDGES, GROUSE, TURKEYS**
Gallus gallus	domestic chicken
CHARADRIIDAE	**PLOVERS**
Charadrius vociferus	killdeer
SCOLOPACIDAE	**SANDPIPERS**
Calidris minutilla	least sandpiper
COLUMBIDAE	**PIGEONS & DOVES**
Columba livia	rock dove
STRIGIDAE	**TRUE OWLS**
Athene cunicularia	burrowing owl
PICIDAE	**WOODPECKERS**
Picoides villosus	hairy woodpecker
ALAUDIDAE	**LARKS**
Eremophila alpestris	horned lark
CORVIDAE	**JAYS & CROWS**
Aphelocoma californica	western scrub-jay
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Pica nuttalli	yellow-billed magpie
MIMIDAE	**MOCKINGBIRDS, THRASHERS**
Mimus polyglottos	northern mockingbird
ICTERIDAE	**BLACKBIRDS**
Sturnella neglecta	western meadowlark
EMBERIZIDAE	**EMBERIZIDS**
Chondestes grammacus	lark sparrow
PASSERIDAE	**OLD WORLD SPARROWS**
Passer domesticus	house sparrow
SCIURIDAE	**SQUIRRELS**
Spermophilus sp.	ground squirrel

TABLE 3 (Continued)

Wildlife Observed within the Study Area

Scientific Name	Common Name
CLASS MAMMALIA	**MAMMALS**
CANIDAE	**WOLVES & FOXES**
Canis familiaris	domestic dog
Canis latrans	coyote
FELIDAE	**CATS**
Felis catus	domestic cat
EQUIDAE	**HORSES & BURROS**
Equus caballus	horse
Equus asinus	donkey
BOVIDAE	**BISON, GOATS & SHEEP**
Bos bovis	domestic cattle
Ovis aries	domestic sheep

4.4 SPECIAL-STATUS SPECIES

In general terms, "special-status" plant and wildlife species are those that receive local, state, and/or federal protection.

4.4.1 Special-Status Plants

Sixteen special-status plant species were reported in the CNDDB (CDFG, 2006) and the CNPSEI (CNPS, 2006) to have the potential to occur within the Atwater, El Nido, Merced, and Sandy Mush USGS quadrangles, which included all areas of the study site. A discussion of each special-status plant species is presented in Table 4. Based on literature reviews and field surveys, it was determined that two special-status plant species are likely to be absent from the study area, given elevation range restrictions; 10 species have a low potential for occurrence because their distribution is restricted by substantive habitat requirements that are negligible within the study area. In these cases, no further survey or study is obligatory to determine the likely presence or absence of these species.

TABLE 4

Summary of Sensitive Plant Species and Potential for Occurrence in the Vicinity of South Merced

Scientific Name	Common Name	Status Listing	Habitat and Distribution	Flowering Season	Potential for Occurrence
Atriplex cordulata	heartscale	Fed: None CA: None CNPS: 1B	Annual herb. Occurs in chenopod scrub, meadows and seeps, sandy valley and foothill grassland, usually in saline or alkaline soils. Up to 1,230 feet in elevation.	April – October	**Low**

TABLE 4 (Continued)

Summary of Sensitive Plant Species and Potential for Occurrence in the Vicinity of South Merced

Scientific Name	Common Name	Status Listing	Habitat and Distribution	Flowering Season	Potential for Occurrence
Atriplex depressa	brittlescale	Fed: None CA: None CNPS: 1B	Annual herb. Occurs in chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, and vernal pools in alkaline or clay soils. Up to 1,050 feet in elevation.	May – October	**Low**
Atriplex minuscula	lesser saltscale	Fed: None CA: None CNPS: 1B	Annual herb. Occurs in chenopod scrub, valley and foothill grasslands, playas, and sandy alkali soils. From 50 to 660 feet in elevation.	May – October	**Low**
Atriplex persistens	vernal pool smallscale	Fed: None CA: None CNPS: 1B	Annual herb. Occurs in alkaline vernal pools. From 30 to 380 feet in elevation.	June – October	**Low**
Atriplex subtilis	subtle orache	Fed: None CA: None CNPS: 1B	Annual herb. Occurs in valley and foothill grassland. From 130 to 330 feet in elevation.	June – August	**Low**
Castilleja campestris ssp. *succulenta*	succulent owl's-clover	Fed: THR CA: END CNPS: 1B	Hemiparasitic annual herb. Occurs in vernal pools and valley and foothill grasslands, often on acidic soils. From 80 to 2,460 feet in elevation.	April – May	**Moderate**
Delphinium recurvatum	recurved larkspur	Fed: None CA: None CNPS: 1B	Perennial herb. Occurs in chenopod scrub, cismontane woodland, and valley and foothills grassland, often on alkaline soils. Up to 2,460 feet in elevation.	March – June	**Low**
Downingia pusilla	dwarf downingia	Fed: None CA: None CNPS: 2	Annual herb. Occurs in mesic valley and foothill grassland, lakes, and vernal pools. Up to 1,590 feet in elevation.	March – May	**Low**
Eryngium racemosum	Delta button-celery	Fed: None CA: END CNPS: 1B	Annual to perennial herb. Occurs in riparian scrub in vernally mesic clay depressions. Up to 250 feet in elevation.	June – September	**Low**
Eryngium spinosepalum	spiny-sepaled button-celery	Fed: None CA: None CNPS: 1B	Annual to perennial herb. Occurs in valley and foothill grassland and vernal pools. From 330 to 1,380 feet in elevation.	April – May	**Low**
Navarretia nigelliformis ssp. *radians*	shining navarretia	Fed: None CA: None CNPS: 1B	Annual herb. Occurs in cismontane woodland, vernal pools, and valley and foothill grassland. From 660 to 3,280 feet in elevation.	May – July	**Absent**
Neostapfia colusana	Colusa grass	Fed: THR CA: END CNPS:1B	Annual herb. Occurs in adobe soil vernal pools. From 15 to 660 feet in elevation.	May – August	**Moderate**
Orcuttia inaequalis	San Joaquin Valley orcutt grass	Fed: THR CA: END CNPS:1B	Annual herb. Occurs in vernal pools. From 100 to 2,500 feet in elevation.	April – September	**Moderate**
Orcuttia pilosa	hairy orcutt grass	Fed: END CA: END CNPS: 1B	Annual herb. Occurs in vernal pools. From 180 to 660 feet in elevation.	May – September	**Moderate**

TABLE 4 (Continued)

Summary of Sensitive Plant Species and Potential for Occurrence in the Vicinity of South Merced

Scientific Name	Common Name	Status Listing	Habitat and Distribution	Flowering Season	Potential for Occurrence
Phacelia ciliata var. *opaca*	Merced phacelia	Fed: None CA: None CNPS: 1B	Annual herb. Occurs in valley and foothill grasslands on clay soils. From 200 to 490 feet in elevation.	February – May	**Low**
Sagittaria sanfordii	Sanford's arrowhead	Fed: None CA: None CNPS: 1B	Rhizomatous perennial herb. Occurs in shallow freshwater swamps and marshes. Up to 2,000 feet in elevation.	May – October	**Absent**

General references: Hickman, 1993; Munz, 1974; CNPS, 2006; CDFG, 2006

Federal designations: (federal Endangered Species Act, USFWS):
END: Federal-listed, endangered.
THR: Federal-listed, threatened.

State designations: (California Endangered Species Act, CDFG)
END: State-listed, endangered.
THR: State-listed, threatened.
RARE: State-listed as rare

***California Native Plant Society (CNPS) designations*:**
List 1A: Plants presumed extinct in California.
List 1B: Plants rare and endangered in California and throughout their range.
List 2: Plants rare, threatened, or endangered in California but more common elsewhere in their range.
List 3: Plants about which we need more information; a review list.
List 4: Plants of limited distribution; a watch list.

Definitions of Occurrence Probability:

Absent
Species distribution is restricted by substantive habitat requirements, which do not occur within the study area, and no further survey or study is obligatory to determine likely presence or absence of this species within the study area.

Low
Species distribution is restricted by substantive habitat requirements, which are negligible within the study area, and no further survey or study is obligatory to determine likely presence or absence of this species within the study area.

Moderate
Species distribution is restricted by substantive habitat requirements, which marginally or mostly occur within the study area, and further survey or study is necessary to determine likely presence or absence of species from the study area.

High
Species distribution is restricted by substantive habitat requirements, which occur within the study area, and further survey or study is necessary to determine likely presence or absence of species from the study area.

Present
Species observed on the site during surveys described here, or recorded on site by other qualified biologists.

Absent, Low, and Present categories correspond to a recommendation that a focused survey not be conducted. The Moderate and High categories correspond to a recommendation that a focused survey be conducted.

Four species were determined to have a moderate potential to occurgiven the presence of substantive habitat requirements that occur marginally or primarily within the study area. However, no special status plant species were observed within the study area during the survey. If there is a moderate potential for special-status species to occur within the study area, in certain circumstances, subsequent projects are obligated to conduct surveys and implement specific avoidance, minimization, and mitigation measures to compensate for adverse impacts. This applies to the following plant species:

- Succulent owl's-clover (*Castilleja campestris ssp. succulenta*)

- Colusa grass (*Neostapfia colusana*)
- San Joaquin Valley orcutt grass (*Orcuttia inaequalis*)
- Hairy orcutt grass (*Orcuttia pilosa*)

4.4.2 Special-Status Wildlife

Fifteen special-status wildlife species were reported in the CNDDB (CDFG, 2006) and literature review, and two additional species (Golden eagle and northern harrier) were included, that were not reported in CNDDB In total, 17 local, state, and/or federally protected wildlife species were considered for their potential to occur within the project study area (Table 5). Based on field surveys, literature review, and species specialist's informal consultation, four species were considered to be absent because suitable habitat is lacking. Three species were found to have a low potential to occur within the study area because of their restrictive distribution and substantive habitat requirements that are negligible within the study area. As a result, no further survey or study is obligatory to determine the likely presence or absence of these species within the study area.

TABLE 5

Summary of Special Status Wildlife Species and Potential for Occurrence in the Vicinity of South Merced

Scientific Name	Common Name	Status Listing	Habitat	Potential For Occurrence
CLASS BRANCHIOPODA	**BRINE AND FAIRY SHRIMPS**			
Branchinecta lynchi	vernal pool fairy shrimp	FT	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains in vernal pools.	**Moderate**
Branchinecta mesovallensis	midvalley fairy shrimp	FSC, CSC	Endemic to vernal pools in the Central Valley.	**Moderate**
Lepidurus packardi	vernal pool tadpole shrimp	FE	Endemic to vernal pools of the central valley, coast ranges, and limited occurrences in the transverse range.	**Moderate**
Linderiella occidentalis	California linderiella	FSC, CSC	Found in seasonal pools in unplowed grassland with old, alluvial soils underlain by hardpan, or in sandstone depressions. The water in these pools has very low alkalinity, conductivity, and total dissolved solids.	**Moderate**

TABLE 5 (Continued)

Summary of Special Status Wildlife Species and Potential for Occurrence in the Vicinity of South Merced

Scientific Name	Common Name	Status Listing	Habitat	Potential For Occurrence
CLASS AMPHIBIA	**AMPHIBIANS**			
Ambystoma californiense	California tiger salamander	FT, CSC	Annual grasslands and grassy understory of valley-foothill hardwood habitats in central and northern California. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	**Low**
Spea hammondii	western spadefoot toad	FSC, CSC	Inhabit primarily grassland habitats, but also can be found in valley and valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg laying.	**Absent**
CLASS REPTILIA	**REPTILES**			
Emys marmorata	western pond turtle	CSC	Occur in a variety of habitats that are adjacent to permanent or nearly permanent water. Require basking sites. Nests may be up to 0.3 mile from water.	**Absent**
Gambelia sila	blunt-nosed leopard lizard	FE, SE	Inhabit sparsely vegetated alkali and desert scrub habitats, in area of low topographic relief. Shelters in burrows made by other animals, under shrubs, or under structures.	**Absent**
Thamnophis gigas	giant garter snake	FT, ST	Considered the most aquatic of the garter snakes in California. Inhabit freshwater marshes and low-gradient streams. Have adapted to drainage canals and irrigation ditches.	**Moderate**
CLASS AVES	**BIRDS**			
Agelaius tricolor	tricolored blackbird	CSC	Highly colonial. Most numerous in the Central Valley, largely endemic to California. Require open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**Low**

TABLE 5 (Continued)

Summary of Special Status Wildlife Species and Potential for Occurrence in the Vicinity of South Merced

Scientific Name	Common Name	Status Listing	Habitat	Potential For Occurrence
Athene cunicularia	burrowing owl	CSC	Prefer open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Dependent on small mammal burrows (particularly ground squirrels) for subterranean nesting.	**Present**
Aquila chrysaetos	Golden eagle	CSC	Found along rolling foothills or coast-range terrain with large trees (scattered oaks, sycamores, digger pines) in open areas. Cliff-walled canyons provide nesting habitat.	**Moderate (Foraging)**
Circus cyaneus	northern harrier	–	Found near open wetlands, wet meadows, pastures, old fields, freshwater and brackish marshes, grasslands, agricultural fields, shrublands, and riparian corridors.	**Moderate (Foraging)**
Buteo swainsoni	Swainson's hawk	ST	Found in open desert, grassland, or cropland contained scattered, large trees or small groves **[NOT CLEAR]**. Breed in stands with few trees in juniper-sage flats, riparian areas, and oak savannah in the Central Valley.	**Moderate (Foraging)**
Charadrius montanus	mountain plover	CSC	Found on short grasslands and plowed fields of the Central Valley from Sutter and Yuba Counties south. Also found in foothill valleys west of San Joaquin Valley and in Imperial Valley. Do not nest in California. Nest in high-elevation grassland, often blue grama and buffalo grass patches. Frequent open plains with low, herbaceous or scattered shrub vegetation.	**Low**
CLASS MAMMALIA	**MAMMALS**			
Taxidea taxus	American badger	CSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	**Absent**

TABLE 5 (Continued)

Summary of Special Status Wildlife Species and Potential for Occurrence in the Vicinity of South Merced

Scientific Name	Common Name	Status Listing	Habitat	Potential For Occurrence
Vulpes macrotis mutica	San Joaquin kit fox	FE CT **[NO CT!]**	Found throughout the San Joaquin Valley in grassland and shrubland communities with adequate burrowing rodent populations. Require loose-textured sandy soils for burrowing.	**Low**

Status Codes

Federal
FE = Federally listed; Endangered
FT = Federally listed; Threatened
FSC = Federal Species of Concern
FD = Federally Delisted, but will continued to be monitored.

State
ST = State listed; Threatened
SE = State listed; Endangered

CSC = California Species of Special Concern

SLC = Species of Local Concern

*Taxa that are biologically rare, very restricted in distribution, declining throughout their range, or at a critical stage in their life cycle when residing in California.

Population(s) in California that may be peripheral to the major portion of a taxon's range, but that are threatened with extirpation within California.

Taxa closely associated with a habitat that is declining in California (e.g., wetlands, riparian, old growth forest).

Potential for Occurrence (PFO)

Absent - Species distribution is restricted by substantive habitat requirements that do not occur within the study area; no further survey or study is obligatory to determine likely presence or absence of this species within the study area.

Low - Species distribution is restricted by substantive habitat requirements that are negligible within the study area; no further survey or study is obligatory to determine likely presence or absence of this species within the study area.

Moderate- Species distribution is restricted by substantive habitat requirements that partly or mostly occur within the study area; further survey or study is necessary to determine likely presence or absence of species from the study area.

High - Species distribution is restricted by substantive habitat requirements that occur predominantly within the study area; further survey or study is necessary to determine likely presence or absence of species from the study area.

Present - Species or species sign were observed in the study area.

The Absent, Low, and Present categories correspond to a recommendation that a focused survey not be conducted. The Moderate and High categories correspond to a recommendation that a focused survey be conducted.

Source:

CDFG, 2006 (CNDDB); Atwater, El Nido, Merced, and Sandy Mush USGS 7.5-Minute Quadrangles.

Nonetheless, eight species were found to have a moderate potential to occur within the study area. The moderate potential for occurrence designation is used when species distributions are restricted by substantive habitat requirements, that occur marginally or primarily within the study area. Therefore, further survey or study is necessary to determine the likely presence or absence of species from the study area. Two raptors, including one designated as a California species of special concern (northern harrier and burrowing owl) were observed during field surveys conducted within the study area. Therefore, specific portions of the study area can support local, state, and federally protected species. As a result, any special-status species with a high or

moderate potential for occurrence within the study area, in certain circumstances, obligates subsequent projects to conduct surveys and implement specific avoidance, minimization, and mitigation measures to compensate for adverse impacts. This applies to the following wildlife species:

- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Midvalley fairy shrimp (*Branchinecta mesovallensis*)
- Vernal pool tadpole shrimp (*Lepidurus packardi*)
- California linderiella (*Linderiella occidentalis*)
- Giant garter snake (*Thamnophis gigas*)
- Tricolored blackbird (*Agelaius tricolor*)
- Burrowing owl (*Athene cunicularia*)
- Golden eagle (*Aquila chrysaetos*)
- Swainson's hawk (*Buteo swainsoni*)
- Northern harrier (*Circus cyaneus*)

4.5 POTENTIAL CWA AND CDFG CODE 1600 (ET SEQ.) JURISDICTIONAL FEATURES

4.5.1 Existing Conditions

The study area is relatively flat and has been used extensively as agricultural cropland (see Photograph 2 on Figure 4). Elevations range from approximately 150 to 175 feet within the study area and gently slope toward the west. The site contains numerous agricultural ditches and canals (see Photographs 6 and 7 on Figure 4), most of which are well maintained and devoid of riparian and wetland vegetation. The agricultural canals/ditches depicted on the USGS Merced quadrangle map were evaluated using aerial photographs and ground reconnaissance during the site survey on November 29 and 30, 2006. These canals/ditches were determined to be present and generally accurate as shown. Consequently, the USGS agricultural canals are depicted on Figure 3 of this report.

In a few instances, some agricultural fields have been left untilled, and wetland marsh plant species have appeared within these areas (often adjacent to canals and ditches). For example, an approximately 9-acre parcel consisting of hydrophytic vegetation is in the west central portion of the study area; it is bordered by Tyler Road on the east and Cone Avenue on the north (see Figure 3 and and Photograph 1 on Figure 4). These ditches and canals are predominantly either soft-bottomed or concrete-lined, and marginal riparian or wetland vegetation is associated with them (see Photograph 6 on Figure 4). The highest quality riparian habitat observed was discovered within a drainage ditch that had not been maintained and that currently supports riparian habitat consisting primarily of cottonwood trees (*Populus* sp.) (see Figure 3).

4.5.2 Jurisdictional Considerations

The ditches and canals within the study area may be subject to CWA Section 404 or 401 and to CDFG Code 1600 (et seq.) jurisdiction. Therefore, before authorization of any subsequent projects within the study area, surveys, and in certain circumstances consultation with the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and CDFG will be obligatory

regarding implementing specific avoidance, minimization, and mitigation measures to compensate for adverse impacts.

There are exemptions to CWA jurisdiction; one of these is an exemption for "prior converted croplands." According to the Code of Federal Regulations (CFR) (33 CFR.3283), the waters of the United States do not extend to prior converted croplands. Prior converted croplands are defined as agricultural lands that have been subject to extensive and relatively permanent modifications and alteration (i.e., altered and cropped before December 23, 1985) so that the resultant cropland constitutes the "normal circumstances." Consequently, the "normal circumstances" of prior converted croplands generally do not support a prevalence of hydrophytic vegetation; therefore, they are not subject to regulation under Section 404 of the CWA. If certain fields in the study area have been in continual agricultural use (i.e., the land has not lain idle or fallow or been abandoned) since 1985, those sites will not be considered subject to CWA jurisdiction.

5.0 Conclusion

In addition to agriculture and developed areas, unique plant communities and wildlife habitats have been detected (Table 2). Two special-status wildlife species (burrowing owl and northern harrier) were detected within the study area during the survey. No other local, state, or federally protected plant or animal species was observed within the study area during biological reconnaissance surveys. However, several agricultural fields have been left fallow, allowing for the formation of a substantial amount of vernal-marsh habitat. Consequently, portions of these areas could support a diversity of wildlife, including special-status species that might, in certain circumstances, obligate subsequent projects to include surveys and specific mitigation programs. This would apply to the following wildlife and plant species.

Wildlife

- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Midvalley fairy shrimp (*Branchinecta mesovallensis*)
- Vernal pool tadpole shrimp (*Lepidurus packardi*)
- California linderiella (*Linderiella occidentalis*)
- Giant garter snake (*Thamnophis gigas*)
- Tricolored blackbird (*Agelaius tricolor*)
- Burrowing owl (*Athene cunicularia*)
- Golden eagle (*Aquila chrysaetos)*
- Swainson's hawk (*Buteo swainsoni*)
- Northern harrier (*Circus cyaneus*)

Plants

- Succulent owl's-clover (*Castilleja campestris ssp. succulenta*)
- Colusa grass (*Neostapfia colusana*)
- San Joaquin Valley orcutt grass (*Orcuttia inaequalis*)
- Hairy orcutt grass (*Orcuttia pilosa*)

Development activities within the study area (e.g., noise, dust, and vibration resulting from development-related activities) could displace foraging animals in the immediate vicinity. There also may be potential for direct adverse impacts (e.g., mortality, removal, etc.) to several commonly occurring native and nonnative wildlife/plant species and to special-status species. Given that the common species within the study area occur in large numbers throughout the region, it is not anticipated that development activities will result in a trend toward state or federal listing, additional protection, apparent changes in habitat availability, or loss of viability for any common species. Therefore, impacts are likely to be considered minor for common plants and animals. However, additional surveys and specific mitigation programs for the cited special-status species are needed to evaluate potential adverse development-related impacts and effects.

Furthermore, potential CWA and CDFG jurisdictional features occur within the study area. These are aquatic resources that include numerous agricultural canals and ditches and a few fields, left fallow, that have subsequently established vernal-marsh habitat with wetland vegetation. Therefore, additional surveys and specific mitigation programs for the potentially

jurisdictional aquatic resources are needed to evaluate potential adverse development-related impacts and effects.

In addition, impacts to migratory birds and raptors could result from habitat loss associated with development. Clearing any vegetation also could destroy nests and burrows and cause mortality of juveniles and adults. This potential impact could be reduced greatly or avoided by the completion of vegetation-clearing activities before the onset of breeding season, to the maximum extent practicable. Vegetation clearing before any development activities would deter most individuals from selecting nesting or breeding substrates within the proposed development areas. Furthermore, any vegetation-clearing activities have the potential to result in direct take of species protected under Section 10 of the Migratory Bird and CDFG Code 3500 (et seq.).

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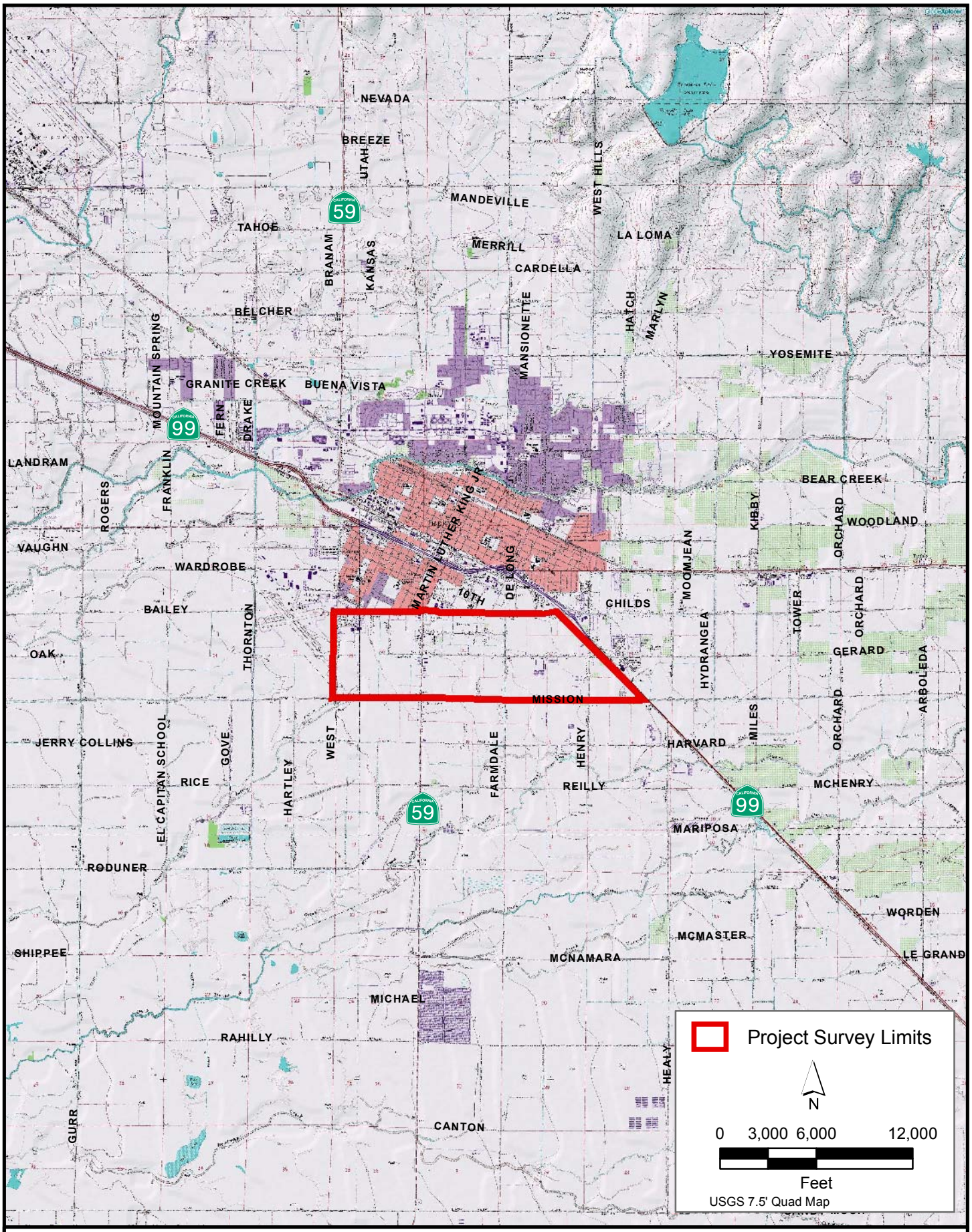
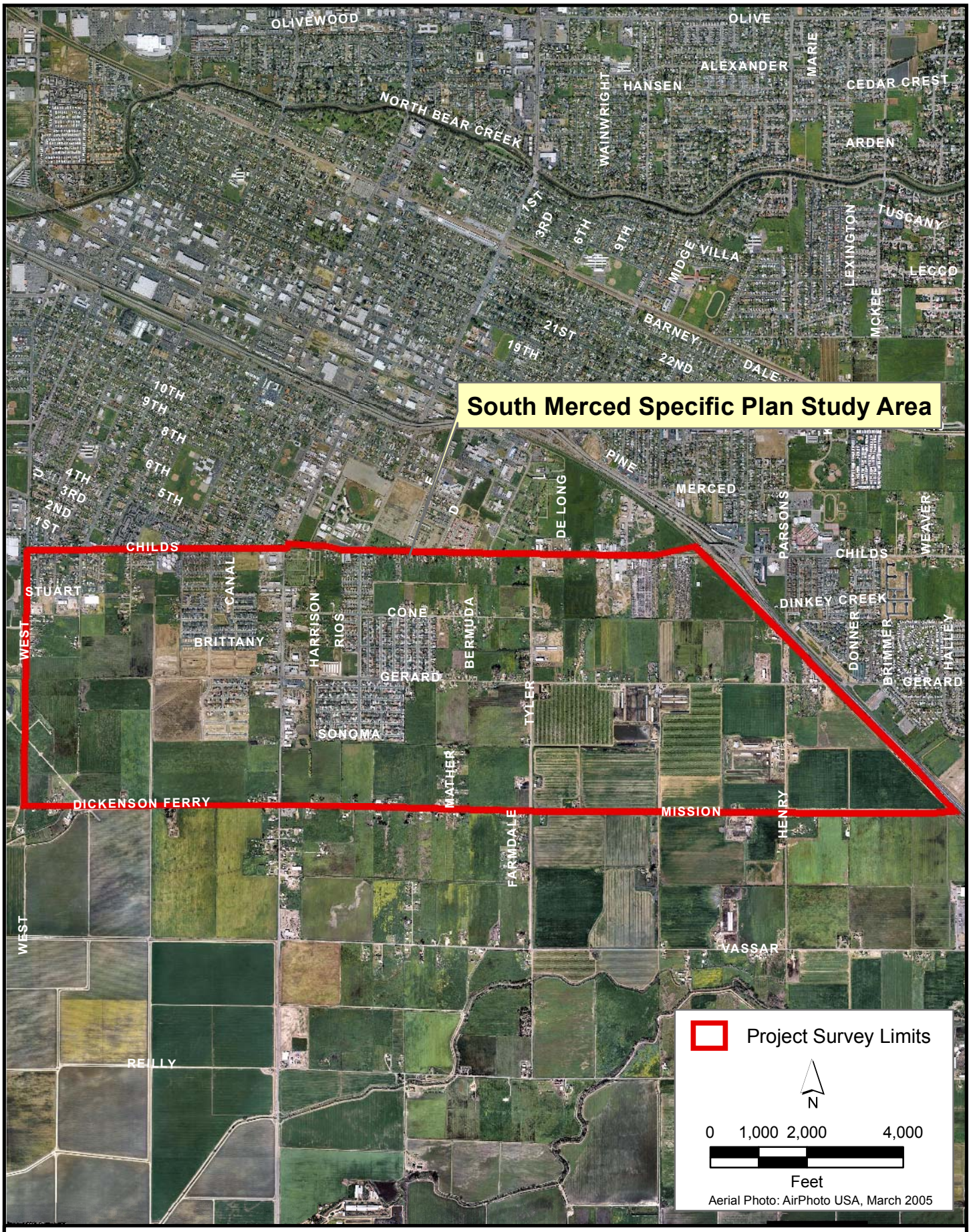


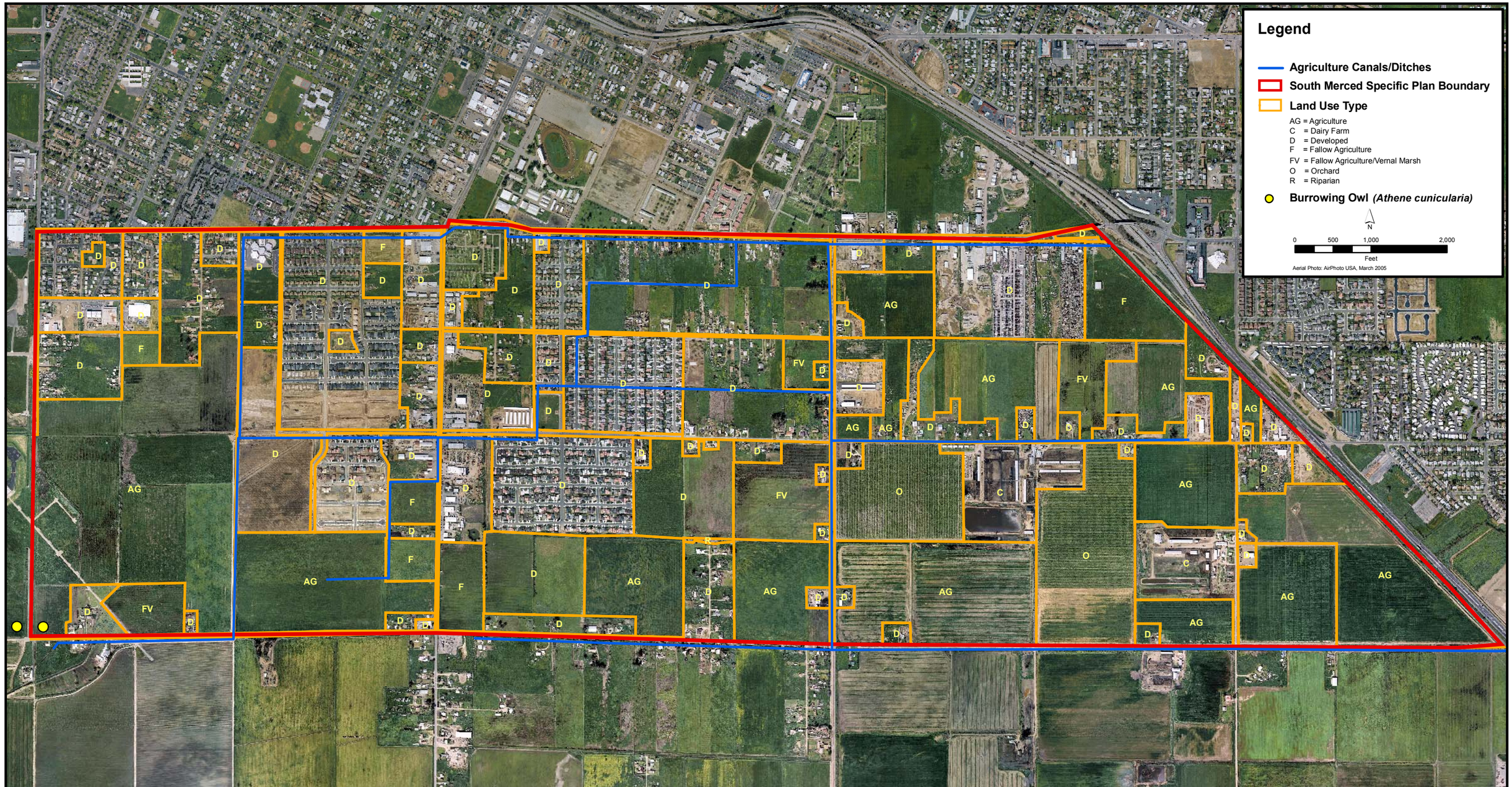
South Merced Specific Plan Vicinity Map

PROJECT NO.: 17325731.30000	PROJECT:	South Merced Specific Plan Biological Technical Report	FIGURE 1



South Merced Specific Plan Study Area

PROJECT NO.: 17325731.30000	PROJECT: South Merced Specific Plan Biological Technical Report	FIGURE 2	URS



South Merced Specific Plan

PROJECT NO.: 17325731.30000	PROJECT: Vegetation Communities and Drainage Map	FIGURE 3	URS

Photograph: 1

Photo Date: November 29, 2006

Comment: Photo depicts developing marsh area left fallow for an undeterminable number of years.

Photograph: 2

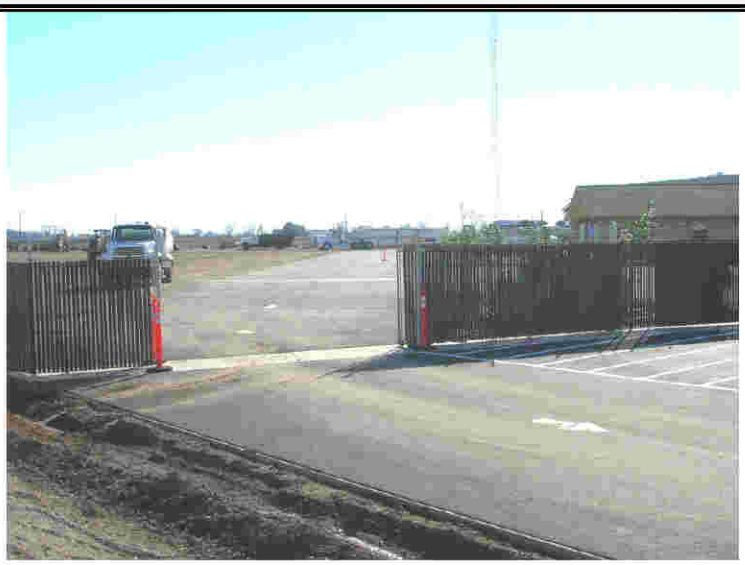
Photo Date: November 29, 2006

Comment: Photo depicts active agricultural land that occurs throughout, and is typical of the study area.

Photograph: 3

Photo Date: November 29, 2006

Comment: Photo depicts older residential areas that occur in the study area.



Photograph: 4

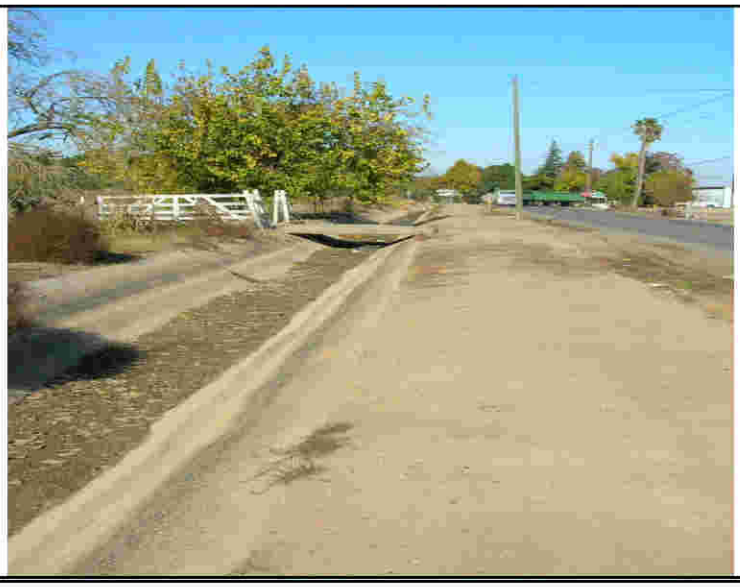
Photo Date: November 29, 2006

Comment: Photo depicts the gated entry to an industrial site. Numerous industrial properties occur throughout the study area.

Photograph: 5

Photo Date: November 29, 2006

Comment: Photo depicts newly constructed tract homes in the background and the building pad for homes to be constructed in the foreground that occurs within the study area.



Photograph: 6

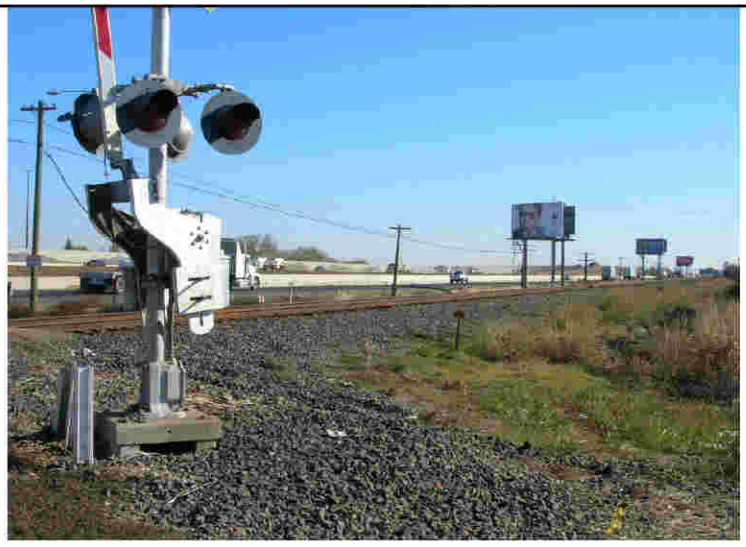
Photo Date: November 29, 2006

Comment: Photo depicts a typical concrete-lined channel that is used as both a storm drain and agricultural channel that occurs throughout the study area.

Photograph: 7

Photo Date: November 29, 2006

Comment: Photo depicts the area of the burrowing owl sightings which occurred in the south west corner of the study area.



Photograph: 9

Photo Date: November 29, 2006

Comment: Photo depicts a train track that runs along the eastern edge of the study area.

Photograph: 10

Photo Date: November 29, 2006

Comment: Photo depicts cattle farming within the study area.

APPENDIX C

CULTURAL RESOURCES RECORDS SEARCH: CENTRAL CALIFORNIA INFORMATION CENTER LETTER, NOVEMBER 21, 2006

CENTRAL CALIFORNIA INFORMATION CENTER
California Historical Resources Information System
Department of Anthropology - California State University, Stanislaus
801 W. Monte Vista Avenue, Turlock, California 95382
(209) 667-3307 - FAX (209) 667-3324

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

Date: 11/21/2006

CCIC File #: 6511I
Project: South Merced Specific Plan, URS Project No. 1735732

Dustin Kay
Staff Archaeologist and Planner
URS Corporation
10723 Bell Court
Rancho Cucamonga, CA 91730

Dear Mr. Kay:

We have conducted an **expedited** records search as per your request for the above-referenced project area located on the Atwater and Merced USGS 7.5-minute quadrangle maps in Merced County.

Search of our files includes review of our maps for the specific project area and a one-half mile radius of the project area (as specified by the client), and review of the National Register of Historic Places, the California Register of Historical Resources, the *California Inventory of Historic Resources* (1976), the *California Historical Landmarks* (1996), and the *California Points of Historical Interest* listing (May 1992 and updates), the Directory of Properties in the Historic Property Data File (HPDF) and Archaeological Determinations of Eligibility (ADOE) (Office of Historic Preservation current computer list dated 09-18-2006), the *CALTRANS State and Local Bridge Survey* (1989 and updates), the *Survey of Surveys* (1989), GLO Plats, and other pertinent historic data available at the CCIC for each specific county.

The following details the results of the records search (copies of records and title pages of reports are attached; please contact me if you require complete copies of reports):

Prehistoric or historic resources within the project area: Eight recorded historical resources, referenced as follows:

Primary # P-24-	Trinomial CA-MER-	Resource Attributes
000086	--	Segment of the Hartley Lateral; see also HPDF 09-18-06: 9, 10, 15; National Register Status (NRS) 6Y
000097	--	Southern Pacific San Joaquin Valley Mainline Railroad
000650	--	Bridge 39-59L; HRI 5340-0008-0000; see also HPDF 09-18-06:31, NRS 7R
000747	--	Merced Cemetery District-Calvary; HRI 5340-0157-0000; see also HPDF 09-18-06:10, NRS 7N
001713	--	Farmdale Slough Bridge 39-99; see also HPDF 09-18-06:15, NRS 6Y; Caltrans Historical Significance, State Bridges-Merced County 08-02-2000:134
001714	--	Colony Slough Bridge 39C-050; see also HPDF 09-18-06:16, NRS 6Y; Caltrans Historical Significance, Local Agency Bridges-Merced County 08-02-2000:122
001715	--	Abandoned segment Highway 99
001716	--	North Farmdale Slough Bridge 39-100; see also HPDF 09-18-06:15, NRS 6Y; Caltrans Historical Significance, State Bridges-Merced County 08-02-2000:134

(2) Copies of the following GLO Plats are provided for your use:

Township	Range	Sheet No.	Dates
7S	13E	44-476	1853-1855
7S	14E	44-477	1853-1854
8S	13E	44-551	1853-1854
8S	14E	44-552	1853-1854

(3) The 1948 edition of the Merced USGS 7.5'-map references buildings and structures that are at least 58 years of age.

Prehistoric or historic resources within a one-half mile radius of the project area: Twenty-one recorded historical resources:

Primary # P-24-	Trinomial CA-MER-	Resource Attributes
000096	--	Farmdale Lateral; see also HPDF 09-18-06:15, NRS 6Y
000593	350H	Foundations; see also ADOE 09-18-06:107, NRS 6Y

Primary # P-24-	Trinomial CA-MER-	Resource Attributes
000594	351H	Foundations
000596	353H	Alfarata Dairy farm; see also ADOE 09-18-06:107, NRS 6Y
000597	354H	Foundations; ; see also ADOE 09-18-06:107, NRS 6Y
000600	357H	Single family property; see also ADOE 09-18-06:107, NRS 6Y
000601	358H	Single family property; see also ADOE 09-18-06:107, NRS 6Y
000642	--	California Historical Landmark No. 934, Temporary Detention Camp Merced County; listed on the California Register of Historical Resources; see also HPDF 09-18-06: 13
000736	--	Merced Cemetery District; HRI 5340-0154-0000; see also HPDF 09-18-06:9, NRS 7N
000737	--	Evergreen Memorial Park; HRI 5340-0155-0000; see also HPDF 09-18-06:9, NRS 5S2
000795	--	Merced County Fire Department Central Station; HRI 5340-0158-0000; see also HPDF 09-18-06: 13, NRS 3S
000796	--	Alan Stout Home; see also HPDF 09-18-06: 13, NRS 5S2
000819	--	501 M Street; HRI 5340-0166-0000; see also HPDF 09-18-06:13, NRS 5S2
000872	--	736 R Street; HRI 5340-0184-0000; see also HPDF 09-18-06:15; NRS 7R
000876	--	536 W. 10th Street; HRI 5340-0035-0000; see also HPDF 09-18-06:15; NRS 7N
000877	--	629 W. 10th Street; HRI 5340-0036-0000; see also HPDF 09-18-06:15; NRS 7R
000878	--	735 W. 10th Street; HRI 5340-0037-0000; see also HPDF 09-18-06:15; NRS 5S2
000879	--	755 W. 10th Street; HRI 5340-0038-0000; see also HPDF 09-18-06:15; NRS 5S2
001711	--	Farmers Insurance Building; see also HPDF 09-18-06:11; NRS 6Y
001808	--	Bettencourt Property; see also HPDF 09-18-06:15; NRS 6Y
001809	--	Campos Property; see also HPDF 09-18-06:12; NRS 5S2

Resources known to have value to local cultural groups: None reported to the Information Center.

Previous investigations within the project: Ten investigations, referenced as follows:

CCIC Report # ME-	Author/Date
00680	Pope (1987)
01799	Peak (1975)
02288	Merced Redevelopment Agency (1985) (City of Merced Historic Resource Inventory)
02759	Hatoff et al. (1995)
03614	Laylander and Silva (1999)
03786	Van Bueren (1999)
03834	Laylander et al. (1999)
04773	Caltrans (1999)
04774	Eastman et al. (1999)
04776	Welch (2000)

Previous investigations within a one-half mile radius of the project area: Twelve investigations, referenced as follows:

CCIC Report # ME-	Author/Date
00644	Napton (1989)
01522	Byars and Werner (1992)
02418	Napton (1994)
02930	Jensen & Associates (1996)
03628	Pierce (1999)
03845	Burton et al. (1999)
04042	Pastron (2000)
04384	URS (2001)
04774	Laylander (1999)
05406	Dice (2002)
05600	Brady and Lanner (2003)
06201	Varner (2006)

Comments:

In accordance with State law, if any historical resources are found during construction, work is to stop and the lead agency and a qualified professional are to be consulted to determine the importance and appropriate treatment of the find.

We understand that you will be conducting an archaeological survey of the proposed project that is the subject of this records search. We look forward to receiving one copy of your report of findings that should include two copies each of completed site records for all historical resources discovered as a result of the survey.

We thank you for contacting this office regarding historical resource preservation. Please let us know when we can be of further service. Please sign and return the attached **Agreement of Confidentiality** form. Billing is attached, payable within 60 days of receipt of the invoice.

Sincerely,

E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

APPENDIX D

TRAFFIC INFORMATION AND ASSUMPTIONS USED TO COMPUTE FUTURE NOISE LEVELS

Table D-1

South Merced Specific Plan Daily Traffic Volumes and Noise Levels

Roadway	Location	ADT	Ldn (dBA) @ 50 Feet	Ldn (dBA) @ 100 Feet	Distance (feet) to 70 Ldn Contour	Distance (feet) to 65 Ldn Contour	Distance (feet) to 60 Ldn Contour	Distance (feet) to 55 Ldn Contour
SR 99 (1)	south of Gerard Ave.	40,500	80.6	77.6	255.2	549.9	1184.7	2552.3
	north of Gerard Ave.	40,000	80.6	77.6	253.1	545.3	1174.9	2531.3
	north of Childs Ave.	41,500	80.7	77.7	259.4	558.9	1204.1	2594.2
SR 59 (2)	13th Ave to Childs Ave	11,800	71.1	68.1	58.9	126.9	273.4	589.0
	Childs Ave to Gerard Ave	8,600	69.7	66.7	47.7	102.8	221.4	477.0
	Gerard Ave to Mission Av.	8,600	69.7	66.7	47.7	102.8	221.4	477.0
Childs Avenue (2)	SR 59 to G St.	4,000	63.5	60.5	18.5	39.8	85.7	184.6
	G St. to Tyler Rd.	4,200	63.7	60.7	19.1	41.1	88.5	190.7
Tyler Road (2)	Childs Ave. to Cone Ave.	3,000	62.3	59.3	15.2	32.8	70.7	152.4
Future With Preferred Project								
SR 99	Childs Ave. to Mission Av.	69,100	82.9	79.9	364.4	785.1	1691.5	3644.3
E 15th Street (3)	D St to B St.	20,600	70.6	67.6	55.1	118.6	255.6	550.6
	B St. to Brantley St.	12,600	68.5	65.5	39.7	85.5	184.2	396.7
E 13th Street (3)	SR 59 to G St.	18,800	68.0	65.0	36.7	79.1	170.5	367.4
	G St. to B St.	10,300	65.4	62.4	24.6	53.0	114.2	246.0
Childs Avenue (3)	West Ave. to M St.	10,400	65.4	62.4	24.8	53.3	114.9	247.6
	M St. to SR 59	12,800	66.3	63.3	28.4	61.3	132.0	284.3
	SR 59 to G St.	17,200	69.8	66.8	48.8	105.2	226.6	488.2
	G St. to B St.	14,500	69.1	66.1	43.6	93.9	202.2	435.7
	B St. to Tyler Rd.							
	Tyler Rd. to Brantley St.	16,200	69.6	66.6	46.9	101.1	217.7	469.1
	Brantley St. to sb SR 99	35,900	73.0	70.0	79.7	171.8	370.1	797.4

Table D-1

South Merced Specific Plan Daily Traffic Volumes and Noise Levels

Assumptions for:			Daytime			Nighttime			REMLS (50 ft)				
73.0%	4.0%	23%	1675	92	528	493	27	155	55	72.7	79.9	83.8	72.3
73.0%	4.0%	23%	1655	91	521	487	27	153	55	72.7	79.9	83.8	72.2
73.0%	4.0%	23%	1717	94	541	505	28	159	55	72.7	79.9	83.8	72.4
87.5%	5.0%	7.5%	585	33	50	172	10	15	45	69.3	77.6	82.1	65.2
87.5%	5.0%	7.5%	426	24	37	125	7	11	45	69.3	77.6	82.1	63.8
87.5%	5.0%	7.5%	426	24	37	125	7	11	45	69.3	77.6	82.1	63.8
95.0%	2.5%	2.5%	228	6	6	42	1	1	45	69.3	77.6	82.1	61.1
95.0%	2.5%	2.5%	239	6	6	44	1	1	45	69.3	77.6	82.1	61.3
95.0%	2.5%	2.5%	171	5	5	32	1	1	45	69.3	77.6	82.1	59.8
73.0%	4.0%	23%	2858	157	901	841	46	265	55	72.7	79.9	83.8	74.6
95.0%	2.5%	2.5%	1174	31	31	217	6	6	45	69.3	77.6	82.1	68.2
95.0%	2.5%	2.5%	718	19	19	133	4	4	45	69.3	77.6	82.1	66.1
95.0%	2.5%	2.5%	1072	28	28	198	5	5	35	65.1	74.8	80.0	64.7
95.0%	2.5%	2.5%	587	15	15	109	3	3	35	65.1	74.8	80.0	62.0
95.0%	2.5%	2.5%	593	16	16	110	3	3	35	65.1	74.8	80.0	62.1
95.0%	2.5%	2.5%	730	19	19	135	4	4	35	65.1	74.8	80.0	63.0
95.0%	2.5%	2.5%	980	26	26	182	5	5	45	69.3	77.6	82.1	67.4
95.0%	2.5%	2.5%	827	22	22	153	4	4	45	69.3	77.6	82.1	66.7
95.0%	2.5%	2.5%	923	24	24	171	5	5	45	69.3	77.6	82.1	67.2
95.0%	2.5%	2.5%	2046	54	54	379	10	10	45	69.3	77.6	82.1	70.6

Table D-1

South Merced Specific Plan Daily Traffic Volumes and Noise Levels

66.8	78.3	79.5	64.7	59.2	70.8	72.0
66.7	78.3	79.5	64.7	59.2	70.7	71.9
66.9	78.4	79.6	64.8	59.3	70.9	72.1
61.0	67.3	70.0	57.6	53.5	59.8	62.4
59.7	65.9	68.6	56.3	52.1	58.4	61.1
59.7	65.9	68.6	56.3	52.1	58.4	61.1
53.6	58.1	63.3	51.5	44.0	48.5	53.8
53.8	58.3	63.5	51.8	44.2	48.8	54.0
52.3	56.8	62.1	50.3	42.8	47.3	52.5
69.1	80.6	81.8	67.0	61.6	73.1	74.3
60.7	65.2	70.5	58.7	51.1	55.7	60.9
58.5	63.1	68.3	56.5	49.0	53.5	58.8
58.6	63.8	67.8	55.1	49.0	54.3	58.3
56.0	61.2	65.2	52.5	46.4	51.6	55.7
56.0	61.2	65.2	52.5	46.5	51.7	55.7
56.9	62.1	66.1	53.5	47.4	52.6	56.6
59.9	64.4	69.7	57.9	50.4	54.9	60.1
59.2	63.7	68.9	57.1	49.6	54.1	59.4
59.6	64.2	69.4	57.6	50.1	54.6	59.9
63.1	67.6	72.9	61.1	53.6	58.1	63.3

Table D-1

South Merced Specific Plan Daily Traffic Volumes and Noise Levels

Roadway	Location	ADT	Ldn (dBA) @ 50 Feet	Ldn (dBA) @ 100 Feet	Distance (feet) to 70 Ldn Contour	Distance (feet) to 65 Ldn Contour	Distance (feet) to 60 Ldn Contour	Distance (feet) to 55 Ldn Contour
Cone Avenue (3)	SR 59 to G St.	300	50.0	47.0	2.3	5.0	10.8	23.3
	G St. to Tyler Rd.	1,500	57.0	54.0	6.8	14.7	31.6	68.1
	Tyler Rd. to Brantley St.	7,000	65.9	62.9	26.8	57.8	124.4	268.1
	Brantley St. to Henry St.	8,600	66.8	63.8	30.8	66.3	142.8	307.6
Gerard Avenue (3)	West Ave. to M St.	2,800	59.7	56.7	10.3	22.2	47.9	103.2
	M St. to SR 59	2,600	59.4	56.4	9.8	21.2	45.6	98.2
	SR 59 to G St.	1,900	58.0	55.0	8.0	17.2	37.0	79.7
	G St. to Tyler Rd.	1,700	57.6	54.5	7.4	15.9	34.4	74.0
	Tyler Rd. to Brantley St.	3,300	60.4	57.4	11.5	24.8	53.5	115.2
	Brantley St. to Henry St.	2,700	59.6	56.6	10.1	21.7	46.8	100.8
	Henry St. to NS Collector							
New EW Collector (3)	West of SR 59	2,000	58.3	55.3	8.2	17.8	38.3	82.5
	G St. to Tyler Rd.	2,100	58.5	55.5	8.5	18.4	39.6	85.2
	Tyler Rd. to Brantley St.	5,100	62.3	59.3	15.4	33.2	71.5	154.0
	Brantley St. to Henry St.	1,700	57.6	54.5	7.4	15.9	34.4	74.0
	Henry St. to NS Collector	4,800	62.1	59.1	14.8	31.9	68.6	147.9
Dickenson Ferry Road (3)	West Ave. to SR 59	10,000	67.5	64.5	34.0	73.3	157.9	340.1
Mission Avenue (3)	SR 59 to Tyler St.	9,500	67.3	64.3	32.9	70.8	152.5	328.7
	Tyler Rd. to Brantley St.	11,200	68.0	65.0	36.7	79.0	170.2	366.8
	Brantley St. to Henry St.	13,800	68.9	65.9	42.2	90.8	195.7	421.5
	Henry St. to NS Collector	28,300	72.0	69.0	68.0	146.6	315.8	680.4
	NS Collector to SR 99 ramps	35,900	73.0	70.0	79.7	171.8	370.1	797.4
	Across SR 99	39,600	73.5	70.5	85.1	183.4	395.1	851.3
	east of SR 99	44,000	73.9	70.9	91.3	196.7	423.9	913.2
West Avenue (3)	North of Childs Ave.	11,500	65.9	62.8	26.5	57.0	122.9	264.7
	Childs Ave. to Dick. Ferry Rd.	1,700	57.6	54.5	7.4	15.9	34.4	74.0

Table D-1

South Merced Specific Plan Daily Traffic Volumes and Noise Levels

Assumptions for:			Daytime			Nighttime			REMLS (50 ft)				
95.0%	2.5%	2.5%	17	0	0	3	0	0	35	65.1	74.8	80.0	46.7
95.0%	2.5%	2.5%	86	2	2	16	0	0	35	65.1	74.8	80.0	53.7
95.0%	2.5%	2.5%	399	11	11	74	2	2	45	69.3	77.6	82.1	63.5
95.0%	2.5%	2.5%	490	13	13	91	2	2	45	69.3	77.6	82.1	64.4
95.0%	2.5%	2.5%	160	4	4	30	1	1	35	65.1	74.8	80.0	56.4
95.0%	2.5%	2.5%	148	4	4	27	1	1	35	65.1	74.8	80.0	56.1
95.0%	2.5%	2.5%	108	3	3	20	1	1	35	65.1	74.8	80.0	54.7
95.0%	2.5%	2.5%	97	3	3	18	0	0	35	65.1	74.8	80.0	54.2
95.0%	2.5%	2.5%	188	5	5	35	1	1	35	65.1	74.8	80.0	57.1
95.0%	2.5%	2.5%	154	4	4	29	1	1	35	65.1	74.8	80.0	56.2
95.0%	2.5%	2.5%	114	3	3	21	1	1	35	65.1	74.8	80.0	54.9
95.0%	2.5%	2.5%	120	3	3	22	1	1	35	65.1	74.8	80.0	55.1
95.0%	2.5%	2.5%	291	8	8	54	1	1	35	65.1	74.8	80.0	59.0
95.0%	2.5%	2.5%	97	3	3	18	0	0	35	65.1	74.8	80.0	54.2
95.0%	2.5%	2.5%	274	7	7	51	1	1	35	65.1	74.8	80.0	58.7
95.0%	2.5%	2.5%	570	15	15	106	3	3	45	69.3	77.6	82.1	65.1
95.0%	2.5%	2.5%	542	14	14	100	3	3	45	69.3	77.6	82.1	64.8
95.0%	2.5%	2.5%	638	17	17	118	3	3	45	69.3	77.6	82.1	65.6
95.0%	2.5%	2.5%	787	21	21	146	4	4	45	69.3	77.6	82.1	66.5
95.0%	2.5%	2.5%	1613	42	42	299	8	8	45	69.3	77.6	82.1	69.6
95.0%	2.5%	2.5%	2046	54	54	379	10	10	45	69.3	77.6	82.1	70.6
95.0%	2.5%	2.5%	2257	59	59	418	11	11	45	69.3	77.6	82.1	71.0
95.0%	2.5%	2.5%	2508	66	66	464	12	12	45	69.3	77.6	82.1	71.5
95.0%	2.5%	2.5%	656	17	17	121	3	3	35	65.1	74.8	80.0	62.5
95.0%	2.5%	2.5%	97	3	3	18	0	0	35	65.1	74.8	80.0	54.2

Table D-1

South Merced Specific Plan Daily Traffic Volumes and Noise Levels

40.6	45.8	49.8	37.1	31.1	36.3	40.3
47.6	52.8	56.8	44.1	38.1	43.3	47.3
56.0	60.5	65.8	54.0	46.5	51.0	56.2
56.9	61.4	66.7	54.9	47.3	51.9	57.1
50.3	55.5	59.5	46.8	40.8	46.0	50.0
50.0	55.2	59.2	46.5	40.4	45.7	49.7
48.6	53.8	57.9	45.2	39.1	44.3	48.3
48.1	53.4	57.4	44.7	38.6	43.8	47.8
51.0	56.2	60.3	47.6	41.5	46.7	50.7
50.2	55.4	59.4	46.7	40.6	45.8	49.8
48.9	54.1	58.1	45.4	39.3	44.5	48.5
49.1	54.3	58.3	45.6	39.5	44.7	48.8
52.9	58.1	62.1	49.5	43.4	48.6	52.6
48.1	53.4	57.4	44.7	38.6	43.8	47.8
52.7	57.9	61.9	49.2	43.1	48.3	52.3
57.5	62.1	67.3	55.5	48.0	52.5	57.8
57.3	61.8	67.1	55.3	47.8	52.3	57.5
58.0	62.6	67.8	56.0	48.5	53.0	58.3
58.9	63.5	68.7	56.9	49.4	53.9	59.2
62.1	66.6	71.8	60.0	52.5	57.0	62.3
63.1	67.6	72.9	61.1	53.6	58.1	63.3
63.5	68.0	73.3	61.5	54.0	58.5	63.7
64.0	68.5	73.7	62.0	54.4	59.0	64.2
56.4	61.7	65.7	53.0	46.9	52.1	56.1
48.1	53.4	57.4	44.7	38.6	43.8	47.8

Table D-1

South Merced Specific Plan Daily Traffic Volumes and Noise Levels

Roadway	Location	ADT	Ldn (dBA) @ 50 Feet	Ldn (dBA) @ 100 Feet	Distance (feet) to 70 Ldn Contour	Distance (feet) to 65 Ldn Contour	Distance (feet) to 60 Ldn Contour	Distance (feet) to 55 Ldn Contour
M Street (3)	North of Childs Ave.	8,200	64.4	61.4	21.1	45.5	98.1	211.3
	Childs Ave. to Gerard Ave.	5,100	62.3	59.3	15.4	33.2	71.5	154.0
	Gerard Ave. to Dick. Ferry Rd.	2,200	58.7	55.7	8.8	18.9	40.8	87.9
SR 59 (3)	SR 99 to 13th St.	30,000	70.7	67.7	55.6	119.8	258.1	556.0
	13th St. to Childs Ave.	30,100	72.9	69.9	78.6	169.3	364.7	785.7
	Childs Ave. to Gerard Ave.	27,100	72.5	69.5	73.3	157.8	340.0	732.6
	Gerard Ave. to Mission Ave.	24,200	72.0	69.0	67.9	146.4	315.3	679.4
	Mission Ave. to Vassar St.	19,500	71.1	68.0	58.8	126.7	273.1	588.3
G Street (3)	16th St. to 15th St.	31,700	70.3	67.3	52.0	112.1	241.6	520.5
	15th St. to SR 99	20,400	68.3	65.3	38.8	83.6	180.1	387.9
	SR 99 to 13th St.	21,800	68.6	65.6	40.5	87.4	188.2	405.5
	13th St. to Childs Ave.	14,100	66.7	63.7	30.3	65.3	140.8	303.3
	Childs Ave. to Gerard Ave.	6,000	63.0	60.0	17.2	37.0	79.6	171.6
	Gerard Ave. to Mission Ave.	1,700	57.6	54.5	7.4	15.9	34.4	74.0
D Street (3)	16th St. to 15th St.	15,900	67.3	64.3	32.9	70.8	152.5	328.6
B Street (3)	15th St. to 13th St.	7,900	64.2	61.2	20.6	44.4	95.7	206.1
	13th St. to Childs Ave.	14,600	66.9	63.9	31.0	66.9	144.1	310.4
Tyler Road (3)	Childs Ave. to Gerard Ave.	15,400	69.4	66.4	45.4	97.7	210.5	453.5
	Gerard Ave. to Mission Ave.	12,400	68.4	65.4	39.3	84.6	182.2	392.5
	Mission Ave. to Vassar St.	5,000	64.5	61.5	21.4	46.2	99.4	214.2
De Long (3)	15th St. to Childs Ave.	5,200	62.4	59.4	15.6	33.6	72.4	156.0
	Childs Ave. to Gerard Ave.	4,500	61.8	58.8	14.2	30.5	65.7	141.6
	Gerard Ave. to Mission Ave.	1,300	56.4	53.4	6.2	13.3	28.7	61.9
Brantley Street (3)	15th St. to Childs Ave.	9,200	67.1	64.1	32.2	69.3	149.3	321.7
	Childs Ave. to Cone Ave.	18,600	70.2	67.2	51.4	110.8	238.7	514.4
	Cone Ave. to Gerard Ave.	4,700	62.0	59.0	14.6	31.4	67.7	145.8
	Gerard Ave. Mission Ave..	4,600	61.9	58.9	14.4	31.0	66.7	143.7

Table D-1

South Merced Specific Plan Daily Traffic Volumes and Noise Levels

Assumptions for:			Daytime			Nighttime			REMLS (50 ft)				
95.0%	2.5%	2.5%	467	12	12	87	2	2	35	65.1	74.8	80.0	61.1
95.0%	2.5%	2.5%	291	8	8	54	1	1	35	65.1	74.8	80.0	59.0
95.0%	2.5%	2.5%	125	3	3	23	1	1	35	65.1	74.8	80.0	55.3
95.0%	2.5%	2.5%	1615	43	43	475	13	13	35	65.1	74.8	80.0	66.4
95.0%	2.5%	2.5%	1620	43	43	477	13	13	45	69.3	77.6	82.1	69.6
95.0%	2.5%	2.5%	1459	38	38	429	11	11	45	69.3	77.6	82.1	69.1
95.0%	2.5%	2.5%	1303	34	34	383	10	10	45	69.3	77.6	82.1	68.7
95.0%	2.5%	2.5%	1050	28	28	309	8	8	45	69.3	77.6	82.1	67.7
95.0%	2.5%	2.5%	1807	48	48	335	9	9	35	65.1	74.8	80.0	66.9
95.0%	2.5%	2.5%	1163	31	31	215	6	6	35	65.1	74.8	80.0	65.0
95.0%	2.5%	2.5%	1243	33	33	230	6	6	35	65.1	74.8	80.0	65.3
95.0%	2.5%	2.5%	804	21	21	149	4	4	35	65.1	74.8	80.0	63.4
95.0%	2.5%	2.5%	342	9	9	63	2	2	35	65.1	74.8	80.0	59.7
95.0%	2.5%	2.5%	97	3	3	18	0	0	35	65.1	74.8	80.0	54.2
95.0%	2.5%	2.5%	906	24	24	168	4	4	35	65.1	74.8	80.0	63.9
95.0%	2.5%	2.5%	450	12	12	83	2	2	35	65.1	74.8	80.0	60.9
95.0%	2.5%	2.5%	832	22	22	154	4	4	35	65.1	74.8	80.0	63.6
95.0%	2.5%	2.5%	878	23	23	163	4	4	45	69.3	77.6	82.1	66.9
95.0%	2.5%	2.5%	707	19	19	131	3	3	45	69.3	77.6	82.1	66.0
95.0%	2.5%	2.5%	285	8	8	53	1	1	45	69.3	77.6	82.1	62.1
95.0%	2.5%	2.5%	296	8	8	55	1	1	35	65.1	74.8	80.0	59.1
95.0%	2.5%	2.5%	257	7	7	48	1	1	35	65.1	74.8	80.0	58.5
95.0%	2.5%	2.5%	74	2	2	14	0	0	35	65.1	74.8	80.0	53.1
95.0%	2.5%	2.5%	524	14	14	97	3	3	45	69.3	77.6	82.1	64.7
95.0%	2.5%	2.5%	1060	28	28	196	5	5	45	69.3	77.6	82.1	67.8
95.0%	2.5%	2.5%	268	7	7	50	1	1	35	65.1	74.8	80.0	58.6
95.0%	2.5%	2.5%	262	7	7	49	1	1	35	65.1	74.8	80.0	58.5

Table D-1

South Merced Specific Plan Daily Traffic Volumes and Noise Levels

55.0	60.2	64.2	51.5	45.4	50.7	54.7
52.9	58.1	62.1	49.5	43.4	48.6	52.6
49.3	54.5	58.5	45.8	39.7	44.9	49.0
60.4	65.6	69.6	58.9	52.8	58.0	62.1
62.1	66.6	71.8	62.1	54.5	59.1	64.3
61.6	66.1	71.4	61.6	54.1	58.6	63.9
61.1	65.7	70.9	61.1	53.6	58.1	63.4
60.2	64.7	70.0	60.2	52.7	57.2	62.4
60.9	66.1	70.1	57.4	51.3	56.5	60.5
58.9	64.2	68.2	55.5	49.4	54.6	58.6
59.2	64.4	68.5	55.8	49.7	54.9	58.9
57.3	62.6	66.6	53.9	47.8	53.0	57.0
53.6	58.8	62.9	50.2	44.1	49.3	53.3
48.1	53.4	57.4	44.7	38.6	43.8	47.8
57.9	63.1	67.1	54.4	48.3	53.5	57.5
54.8	60.0	64.0	51.4	45.3	50.5	54.5
57.5	62.7	66.7	54.0	47.9	53.2	57.2
59.4	63.9	69.2	57.4	49.9	54.4	59.6
58.5	63.0	68.2	56.5	48.9	53.5	58.7
54.5	59.1	64.3	52.5	45.0	49.5	54.8
53.0	58.2	62.2	49.5	43.5	48.7	52.7
52.4	57.6	61.6	48.9	42.8	48.0	52.1
47.0	52.2	56.2	43.5	37.4	42.7	46.7
57.2	61.7	66.9	55.2	47.6	52.2	57.4
60.2	64.8	70.0	58.2	50.7	55.2	60.5
52.6	57.8	61.8	49.1	43.0	48.2	52.3
52.5	57.7	61.7	49.0	42.9	48.1	52.2

Table D-1

South Merced Specific Plan Daily Traffic Volumes and Noise Levels

Roadway	Location	ADT	Ldn (dBA) @ 50 Feet	Ldn (dBA) @ 100 Feet	Distance (feet) to 70 Ldn Contour	Distance (feet) to 65 Ldn Contour	Distance (feet) to 60 Ldn Contour	Distance (feet) to 55 Ldn Contour
NS Collector (3)	Cone Ave. to Gerard Ave.	1,900	58.0	55.0	8.0	17.2	37.0	79.7
	Gerard Ave. to Mission Ave.	1,500	57.0	54.0	6.8	14.7	31.6	68.1
Henry Street (3)	Parsons Ave. to Gerard Ave.							
	Gerard Ave. to Mission Ave.	15,300	69.3	66.3	45.2	97.3	209.6	451.6
	Mission Ave. to Vassar St.	7,300	66.1	63.1	27.6	59.4	128.0	275.7
NS Collector (3)	North of Mission Ave.	7,800	64.2	61.2	20.4	44.0	94.9	204.4

Table D-1

South Merced Specific Plan Daily Traffic Volumes and Noise Levels

Assumptions for:			Daytime			Nighttime			REMLS (50 ft)				
95.0%	2.5%	2.5%	108	3	3	20	1	1	35	65.1	74.8	80.0	54.7
95.0%	2.5%	2.5%	86	2	2	16	0	0	35	65.1	74.8	80.0	53.7
95.0%	2.5%	2.5%	872	23	23	162	4	4	45	69.3	77.6	82.1	66.9
95.0%	2.5%	2.5%	416	11	11	77	2	2	45	69.3	77.6	82.1	63.7
95.0%	2.5%	2.5%	445	12	12	82	2	2	35	65.1	74.8	80.0	60.8

Table D-1

South Merced Specific Plan Daily Traffic Volumes and Noise Levels

48.6	53.8	57.9	45.2	39.1	44.3	48.3
47.6	52.8	56.8	44.1	38.1	43.3	47.3
59.4	63.9	69.2	57.4	49.8	54.4	59.6
56.2	60.7	65.9	54.2	46.6	51.2	56.4
54.8	60.0	64.0	51.3	45.2	50.4	54.5

Notes:

1. ADT and % truck data for 2004 obtained from Caltrans.
2. ADT for existing traffic obtained from EIR Traffic section, Table 2.
3. ADT for future traffic obtained from EIR Traffic section, Table 4.
2. Assumptions for Daytime-Nighttime Splits:

Daytime = 7:00 a.m. to 10:00 p.m	85% of ADT	for SR 99
Nighttime = 10:00 p.m to 7:00 a.n	15%	
Daytime =	90% of ADT	for surface streets
Nighttime =	10%	

Daytime-Nighttime split for surface streets from City of Merced Noise Element, Table 10.5.

3. REMLS are Reference Energy Mean Levels for each vehicle class.
4. California Vehicle Noise Levels (Calveno) were used for REMLS.
5. For Heavy Trucks, if the speed is lower than 35 mph, then the REMLS equation must be adjusted:

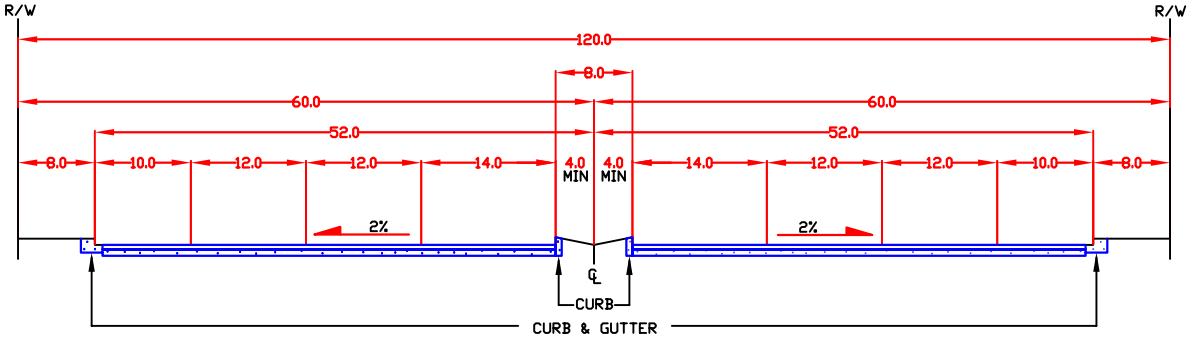
   Use 80 dBA for 31-35 mph,
   51.9+19.2*log(speed, mph) for 25 to 31 mph

speed	HTREML
30	80.3

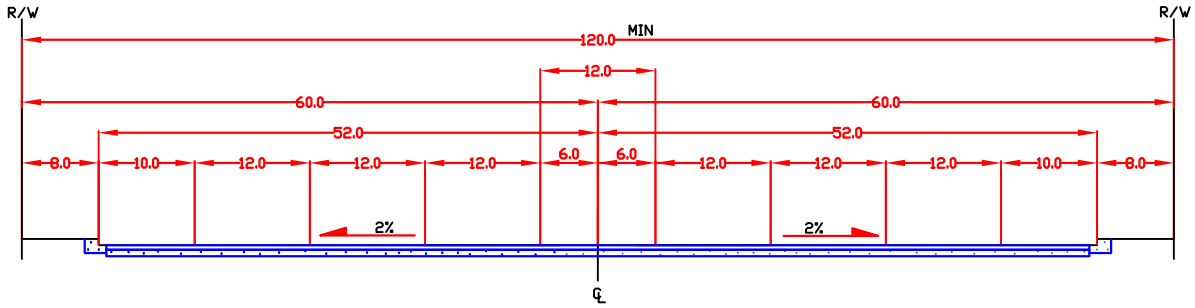
6. Truck Traffic data (% for Medium Trucks and Heavy Trucks) is based on Caltrans 2004 data, or City of Merced Noise element Table 10.5.
7. These calculations use the FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108.. The estimates of distances to Ldn contours are considered accurate out to about 200 m or 600 feet
8. A drop off rate of 4.5 dBA per doubling of distance is used in calculating distance to Ldn contours.

APPENDIX E

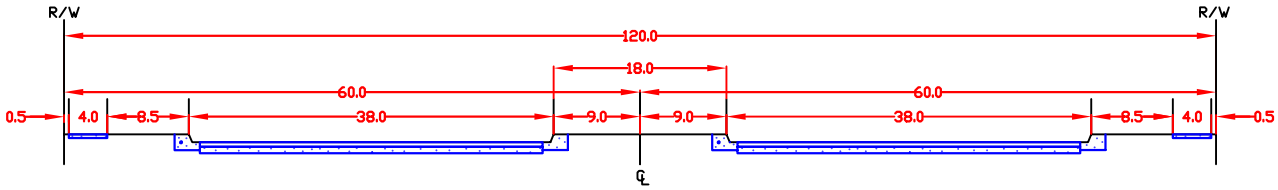
TRANSPORTATION/TRAFFIC



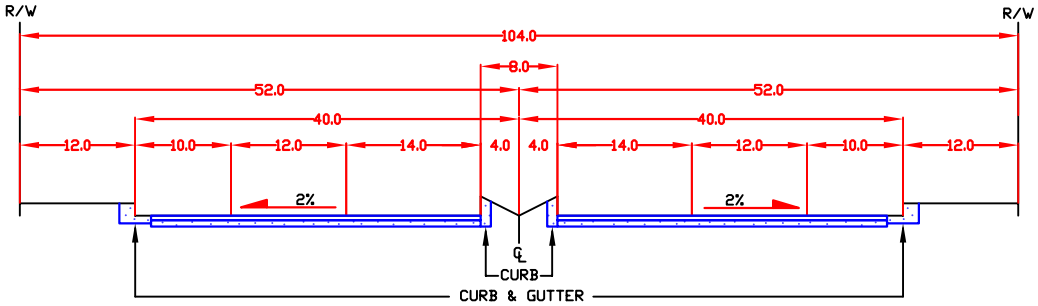
MAJOR ARTERIAL WITH RAISED MEDIAN
TYPICAL SECTION



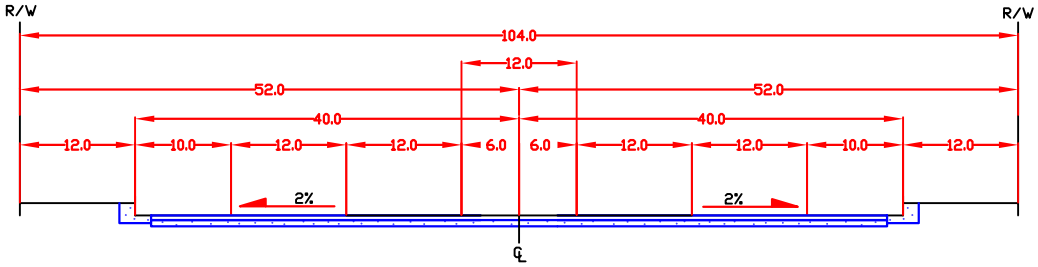
MAJOR ARTERIAL CONTINUOUS LEFT TURN LANE
TYPICAL SECTION



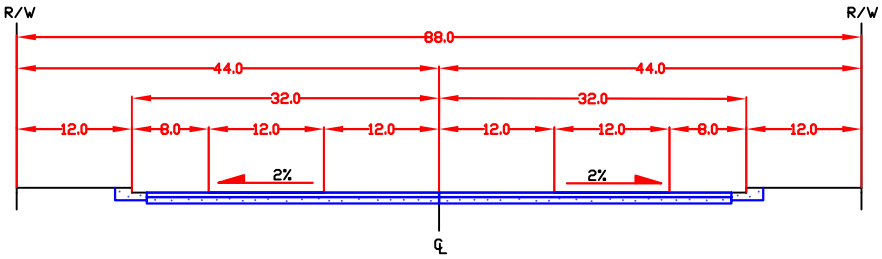
MAJOR DIVIDED HIGHWAY
TYPICAL SECTION



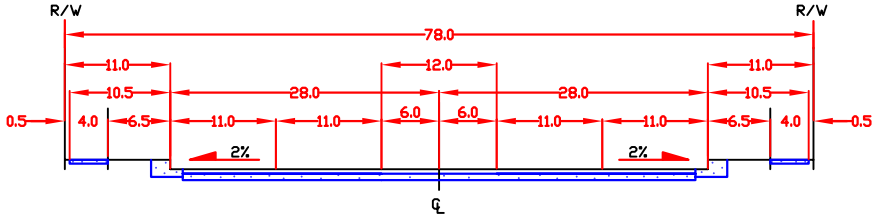
MAJOR HIGHWAY WITH RAISED MEDIAN
TYPICAL SECTION



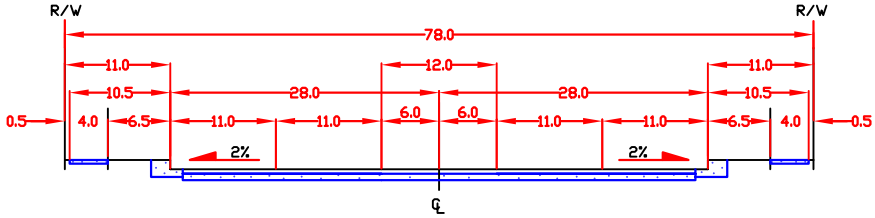
MAJOR HIGHWAY WITH CONTINUOUS LEFT TURN LANE
TYPICAL SECTION



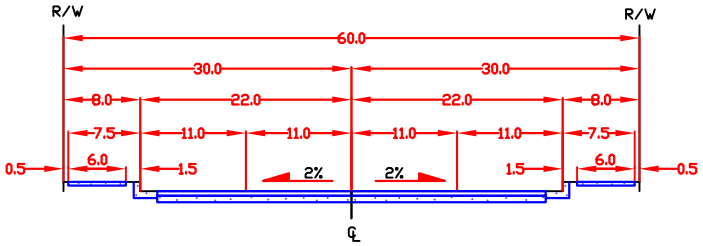
SECONDARY HIGHWAY - MOUNTAIN MAJOR
TYPICAL SECTION



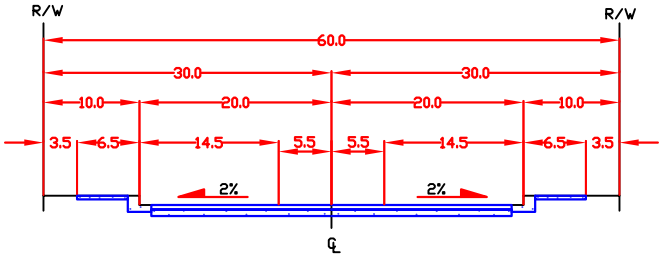
CONTROLLED LIMITED ACCESS COLLECTOR
TYPICAL SECTION



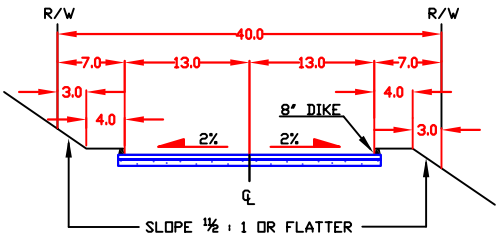
COLLECTOR STREET
TYPICAL SECTION



INDUSTRIAL COLLECTOR
TYPICAL SECTION



LOCAL - PRIMARY STREET
TYPICAL SECTION



MOUNTAIN LOCAL
TYPICAL SECTION

APPENDIX F

NOTICE OF PREPARATION
AND INITIAL STUDY

NOTICE OF PREPARATION

TO: State Agencies
Responsible Agencies
Local and Public Agencies
Trustee Agencies
Interested Parties

FROM: City of Merced
678 West 18th Street
Merced, California 95340

SUBJECT:
1. **Notice of Preparation of a Draft Environmental Impact Report Pursuant to the Requirements of the California Environmental Quality Act (CEQA)**
2. **Notice of Information/Scoping Meeting**

The City of Merced will be the Lead Agency and will prepare an environmental impact report (EIR) for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials. Issues to be addressed in the EIR include air quality and traffic impacts due to the increased intensity of land uses, and hazards and noise impacts associated with the project's proximity to the Merced Municipal Airport. Other environmental impacts are addressed by the Merced Vision 2015 General Plan Final Program EIR (SCH#95082050) as indicated in the attached Initial Study

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than May 26, 2006.

ON MAY 18, 2006, A PUBLIC INFORMATION/SCOPING MEETING IS SCHEDULED TO BE HELD AT 678 W. 18th STREET, MERCED CA 95340 (MERCED CITY HALL) IN THE CITY COUNCIL CHAMBERS (2ND FLOOR) FROM 4 P.M. TO 5 P.M. ALL INTERESTED AGENCIES, PARTIES AND THE GENERAL PUBLIC ARE INVITED TO ATTEND THE MAY 18, 2006 SCOPING MEETING.

Please send your response to Bill King, Principal Planner at the address shown above. We will need the name for a contact person in your agency.

Project Title: South Merced Specific Plan

Project Applicant: City of Merced

Date 4/25/06

Signature for
Bill King, Principal Planner
Telephone: (209) 385-6858

Reference: California Code of Regulations, Title 14 (CEQA Guidelines), Sections 15082, 15103, 15375.

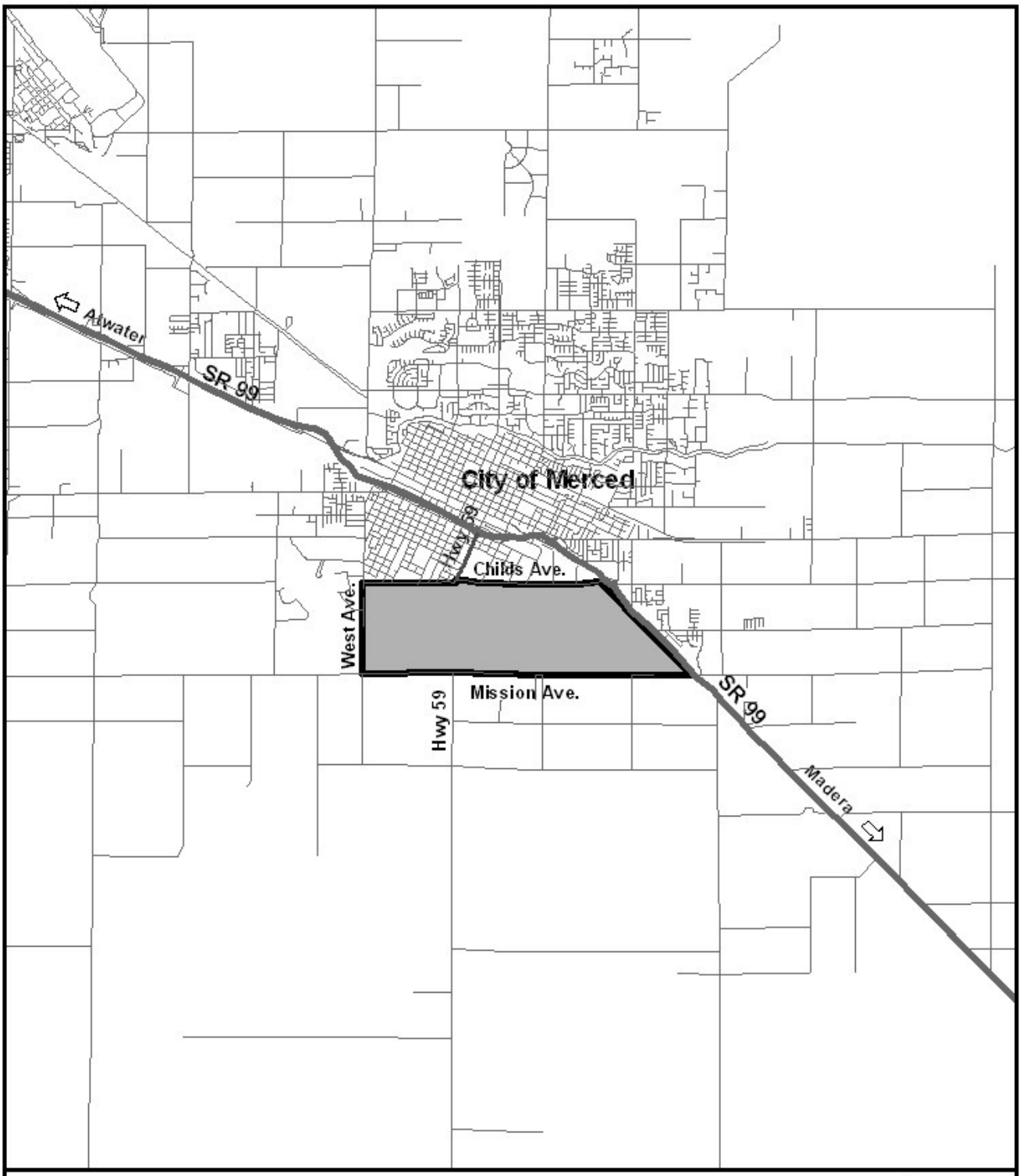
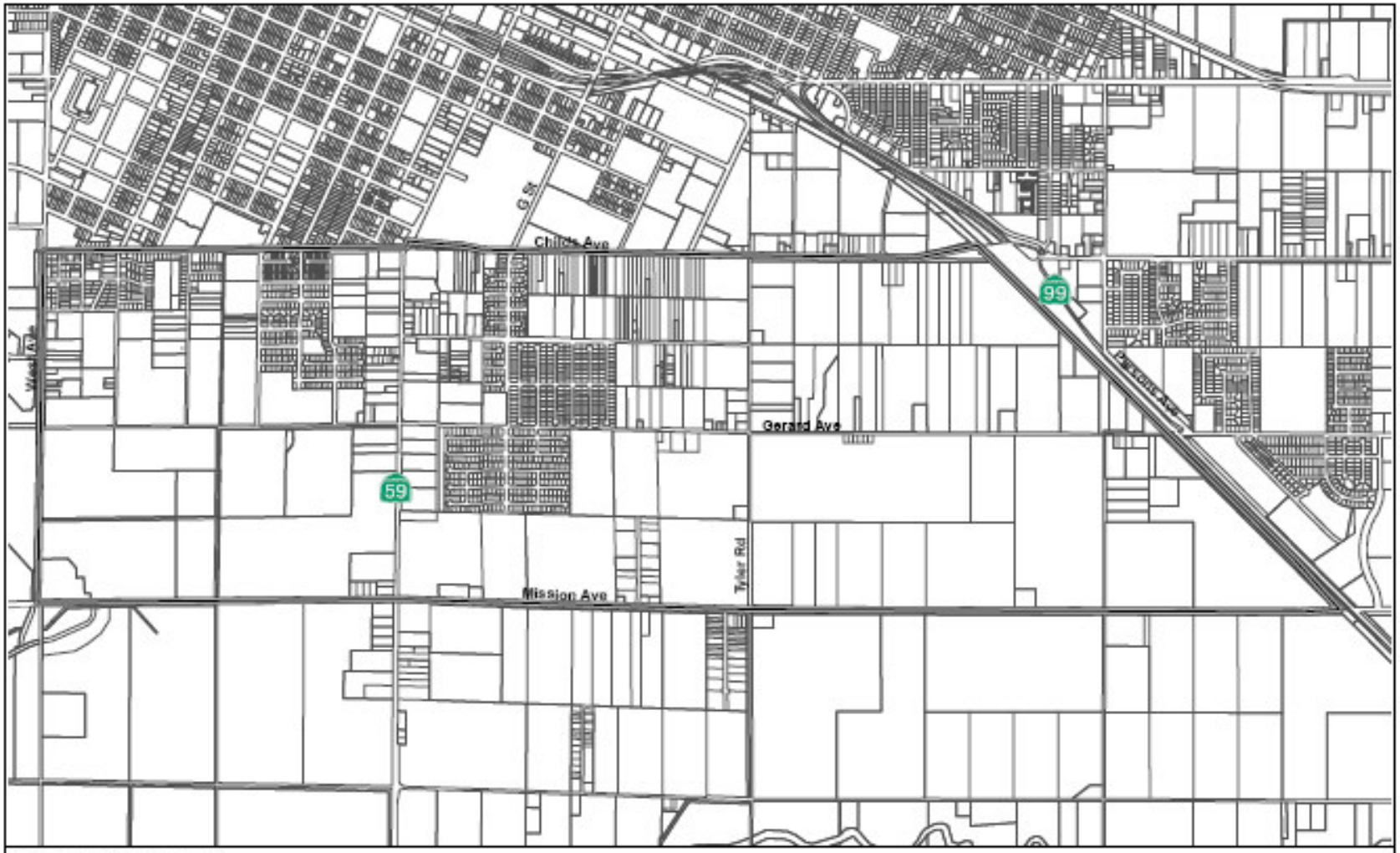


FIGURE 1
REGIONAL LOCATION
SOUTH MERCED SPECIFIC PLAN



City of Merced,California
South Merced Specific Plan

FIGURE X-X
SOUTH MERCED BASE MAP

INITIAL STUDY

1.	Project title: South Merced Specific Plan		
2.	Lead agency name and address: Bill King, Principal Planner City of Merced Planning & Permitting Division 678 West 18th Street Merced, CA 95340		
3.	Contact person and phone number: Bill King, Principal Planner (209) 385-6858		
4.	Project location: The Specific Plan area is located in the southern portion of Merced. The Specific Plan boundaries are Childs Avenue to the north, SR 99 to the east, Mission Avenue / Dickenson Ferry Road to the south, and West Avenue to the west. See Figure 1 Regional Location of the South Merced Specific Plan and Figure 2 Project Boundaries of the South Merced Specific Plan.		
5.	Project sponsor's name and address: Bill King, Principal Planner City of Merced Planning & Permitting Division 678 West 18th Street Merced, CA 95340		
6.	Existing General Plan designations: *City of Merced* • Agricultural • Business Park • Commercial Reserve • General Commercial • Low Density Residential • Low to Medium Density Residential • High to Medium Density Residential • Manufacturing Industrial • Regional Community Commercial Merced County • City Plan Area	7.	Existing Zoning: *City of Merced* • Low Density Residential • Planned Development • Restricted Agriculture • Light Industrial District • General Commercial District Merced County Mixture of land uses including: • General Agricultural • General Manufacturing

8.	Description of project: As requested in Section 45451 of the State Government Code, the South Merced Specific Plan will address the infrastructure, land use and circulation needs for the 1,500-acre South Merced Specific Plan area. According to the Merced Vision 2015 General Plan (*Merced Vision 2015 General Plan*) the South Merced area would especially benefit from improved neighborhood conditions, economic development, more defined land uses, coordinated infrastructure improvements and expanded services. Therefore, the Land Use Element of the General Plan recommended that a Specific Plan be prepared for the South Merced area to address these issues. The South Merced Strategic Plan was adopted in December 2003 as a preliminary report to describe the community's vision for the future of the South Merced area, and outline strategic implementation actions for achieving that vision. The Strategic Plan serves as the fundamental policy basis for the South Merced Specific Plan. Detailed land uses are not known at this time. The land uses would be developed in accordance with input received from the CEQA process (responses to this Notice of Preparation). Input from the Citizens Advisory Committee appointed by the City Council to oversee this process will also guide future land use designations.
9.	Surrounding land uses and setting: Surrounding land uses for the Specific Plan area include single family residential and commercial uses to the north, SR 99 to the east, agricultural and vacant land to the south, and single family residences, industrial uses, and the Merced Municipal Airport to the west.
10.	Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement). • Merced Irrigation District (MID) • San Joaquin Valley Air Pollution Control District • California Dept. Of Transportation (District 10) • Merced County Association of Governments • Merced County Public Works Department
11.	Persons who prepared the Initial Study: URS Corporation/Brian Smith; Nick Trifiro

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

□	Aesthetics	□	Agriculture Resources	■	Air Quality
■	Biological Resources	■	Cultural Resources	□	Geology /Soils
■	Hazards & Hazardous Materials	□	Hydrology / Water Quality	■	Land Use / Planning
□	Mineral Resources	■	Noise	□	Population / Housing
□	Public Services	□	Recreation	■	Transportation/Traffic
■	Utilities / Service Systems	■	Mandatory Findings of Significance		

INITIAL STUDY ENVIRONMENTAL CHECKLIST

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
I. AESTHETICS: *Would the project:*				
a. Have a substantial adverse effect on a scenic vista?				**X**
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			**X**	
c. Substantially degrade the existing visual character or quality of the site and its surroundings?			**X**	
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?		**X**		

Discussion:

a. No scenic vistas have been identified in the Specific Plan area.

b. No scenic resources have been identified in the Specific Plan area. According to the Caltrans Scenic Highway System, there are no designated State Scenic Highways in the Specific Plan area.

c. The Specific Plan area is not formally designated as an area of scenic value. Portions of the Specific Plan area will experience a change from the rural character that is present due to the nature of the proposed development under the Specific Plan. However, the Specific Plan will not result in a substantial degradation of the existing visual character or quality of the site and its surroundings.

d. The General Plan EIR (p. 4.2) indicates that impacts to light and glare, as a result of development under the General Plan, are not likely to be significant due to the implementation of General Plan policies.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
II. AGRICULTURE RESOURCES: *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:*				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?		**X**		
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?		**X**		
c. Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?		**X**		

Discussion:

a. Urban development as a result of the Specific Plan may result in the conversion of farmland to nonagricultural uses. As indicated in the *Merced Vision 2015 General Plan* EIR (p.4.6.13), the loss of cropland due to urban expansion in the General Plan area, where the Specific Plan area is located, cannot be mitigated. However, through implementation of the General Plan policies, potential adverse impacts to agricultural land can be minimized.

b. As indicated in the *Merced Vision 2015 General Plan* EIR (p.4.6.13), the General Plan is compatible with the broader agricultural policies found such documents as the Merced County General Plan, as well as Merced LAFCO policies and provisions.

c. Urban development as a result of the Specific Plan may result in the indirect conversion of farmland. However, as indicated in the in the *Merced Vision 2015 General Plan* EIR (p.4.6.13), the loss of cropland due to urban expansion in the General Plan area, where the Specific Plan area is located, cannot be mitigated. Yet, through implementation of the General Plan policies, potential adverse impacts to agricultural land can be minimized.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
III. AIR QUALITY: *Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:*				
a. Conflict with or obstruct implementation of the applicable air quality plan?			X	
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	X			
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	X			
d. Expose sensitive receptors to substantial pollutant concentrations?		X		
e. Create objectionable odors affecting a substantial number of people?			X	

Discussion:

a. Development as a result of the Specific Plan will create population growth that will either be equal to or less than what is projected by the *Merced Vision 2015 General Plan* . Since the General Plan was used as the basic input for the San Joaquin Valley Air Pollution Control District (SJVAPCD) 1991 Air Quality Attainment Plan, the Specific Plan will comply with the Air Quality Attainment Plan.

b. According to the SJVAPCD, the San Joaquin Valley exceeds the Federal and State standards for ozone and particulate matter (PM 10). Development as a result of the Specific Plan may contribute to these existing violations. Therefore, this issue will be addressed further at a programmatic level in the EIR.

c. Development as a result of the Specific Plan may create a cumulatively considerable net increase of ozone and PM10. The EIR will analyze, at a programmatic level, the potential ozone and PM10 emissions that the Specific Plan will produce.

d. Mitigation Measure 1-c as found in the *Merced Vision 2015 General Plan* EIR (p. 2.5) provides for the minimization of the exposure of sensitive receptors PM10 emissions during construction activities. With this measure incorporated, this impact is considered insignificant.

e. Development as a result of the Specific Plan will involve mostly commercial, residential, and light industrial uses. Therefore, it is not expected that objectionable odors affecting a substantial number of people would be created.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES: *Would the project:*				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	**X**			
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?		**X**		
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		**X**		
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		**X**		
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				**X**
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				**X**

Discussion:

a. As found in the *Merced Vision 2015 General Plan* EIR, Mitigation Measure 3-a (p.2.6) requires biological surveys for site-specific development proposals in order to minimize impacts to habitat special-status species. A search of the California Natural Diversity Database (CNDDB) will be conducted for the EIR to identify any special-status species that may be present in the Specific Plan area. The results of this search will be discussed at a programmatic level in the EIR in accordance with the Defend The Bay, v. City of Irvine court case (filed with Court of Appeal of California, Fourth District, Division Three, June 29, 2004).

b. As indicated in the *Merced Vision 2015 General Plan* EIR, the General Plan (p.4.4.14) contains policies to protect and enhance wildlife habitat. With this measure incorporated, this impact is considered less than significant.

c. As indicated in the *Merced Vision 2015 General Plan* EIR, Mitigation Measure 3-c (p.2.6) requires development proposals to be mitigated in accordance with regulatory agency requirements for wetland protection. With this measure incorporated, this impact is considered less than significant.

d. As indicated in the *Merced Vision 2015 General Plan* EIR, the General Plan (p.4.4.14) contains policies to establish open space corridors along creeks and waterways to facilitate wildlife movement.

e. The City of Merced does not contain a tree preservation policy or ordinance.

f. The Specific Plan area is not part of any adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other local habitat conservation plan. However, in June 2001, Merced County entered into an agreement with the University of California, the California Department of Fish and Game, and the U.S. Fish and Wildlife Service to develop a HCP/NCCP for Eastern Merced County, those unincorporated areas east and north of Highway 99 and those incorporated cities that choose to participate. The HCP/NCCP was expected to take at least 3 years to develop. The City of Merced is not a signatory to the planning agreement, but was participating in the process. The City would have had an option in the future of adopting the HCP/NCCP, but no decision on this issue has been made at this time. This HCP planning process has stopped without a plan, and it is uncertain whether or not this planning process will resume. Therefore, in any event, the Specific Plan will not conflict with any adopted HCP's.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES: *Would the project:*				
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	**X**			
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	**X**			
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	**X**			
d Disturb any human remains, including those interred outside of formal cemeteries?			**X**	

Discussion:

a-c. According to the *Merced Vision 2015 General Plan* EIR (p. 4.2), the cultural resources impacts of development as a result under the General Plan were determined to be not significant due to the normal operation of the City's development review process. However, as part of the EIR, a records search of the Specific Plan area will be requested from the Central California Information Center at California State University, Stanislaus (part of the California Historical Resources Information System) to determine if any significant cultural resources are present in the Specific Plan area. The results of this records search will be addressed at a programmatic level in the EIR.

d. There are two cemeteries located within the Specific Plan area. Although specific road projects have not been selected or designed, the scope of the Project seeks to explore various road alignments and improvements. Due to the proximity of existing cemeteries with potential roadways, the Project may affect human remains.

However, if human remains are discovered during the Project, the specific protocol, guidelines and channels of communication outlined by the California Native American Heritage Commission (NAHC), and in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and SB 447 (Chapter 44, Statutes of 1987) will be followed. Section 7050.5 (c) will guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the Merced County Coroner. The coroner has two working days to examine the remains after being notified by the person responsible for the excavation. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she will contact the NAHC by telephone within 24 hours.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS: *Would the project:*				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			**X**	
ii. Strong seismic ground shaking?			**X**	
iii. Seismic-related ground failure, including liquefaction?			**X**	
iv. Landslides?				**X**
b. Result in substantial soil erosion or the loss of topsoil?			**X**	
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			**X**	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			**X**	
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				**X**

Discussion:

a-d. According to the *Merced Vision 2015 General Plan* EIR (p.4.2), "Earth" impacts, which address exposure to geologic hazards, soil erosion, unstable geologic and soil conditions have been determined not to be significant for the General Plan area.

e. The City of Merced will provide sewer service via the existing sewer system for the Specific Plan area. Septic systems will not be required.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
VII. HAZARDS AND HAZARDOUS MATERIALS: *Would the project:*				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			**X**	
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			**X**	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?		**X**		
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			**X**	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	**X**			
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				**X**
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			**X**	
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				**X**

Discussion:

a-c. According to the General Plan EIR (p. 4.2), the "risk of upset" which includes the risk of an explosion or release of hazardous substances through use, disposal, and transport was determined not to be significant for the General Plan area.

d. According to the U.S. Environmental Protection Agency EnviroFacts database search (www.epa.gov/enviro) conducted in March 2006 and the Merced County Division of Environmental Health, there are several hazardous materials sites located in the Specific Plan area. However, development resulting from the Specific Plan will be in compliance with regulations established by the State Department of Health Services and the Merced County Hazardous Waste Management Plan, and policies found in Chapter 11 (Safety) of the *Merced Vision 2015 General Plan*.

e. The Specific Plan area is located within 2 miles of the Merced Municipal Airport. Although land use designations have not been determined, it is not expected that land uses proposed by the Specific Plan will cause hazards. It is expected that the Merced County Airport Land Use Compatibility Plan will be used as a guide for future land uses in the Specific Plan. However, the EIR will address the application of the Merced County Airport Land Use Compatibility Plan for future land uses in the Specific Plan at a programmatic level.

f. The Specific Plan area is not located within the vicinity of a private airstrip.

g. According to the General Plan EIR (p. 4.2), the "risk of upset", which includes the potential interference with an adopted emergency evacuation or response plan, was determined not to be significant for the General Plan area.

h. The Specific Plan area is adjacent is in an existing urbanized area, and would be served by the City of Merced Fire Department. The Specific Plan area is not located in a wildland interface zone.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
VIII. HYDROLOGY AND WATER QUALITY: *Would the project:*				
a. Violate any water quality standards or waste discharge requirements?		**X**		
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?		**X**		
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site?			**X**	
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?			**X**	
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?		**X**		
f. Otherwise substantially degrade water quality?		**X**		
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?		**X**		
h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?		**X**		
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?		**X**		

j. Inundation by seiche, tsunami, or mudflow?				**X**

Discussion:

a. According to the General Plan EIR (p. 2.5), Mitigation Measure 2-a requires that appropriate City review take place for projects involving direct discharge into the surface water system. This measure reduces this impact to less than significant.

b. According to the General Plan EIR (p. 2.5), Mitigation Measure 2-b requires that the City's water conservation policy be periodically reviewed to ensure continued success in the reduction of water use. This measure reduces this impact to less than significant.

c-d. Proposed drainage improvements resulting from development under the Specific Plan will be performed in accordance with Title 17, Chapter 17.48 (Flood Damage Prevention) of the Merced Municipal Code.

e-f. According to the General Plan EIR (p. 2.5), Mitigation Measure 2-a requires that appropriate City review take place for projects involving direct discharge into the surface water system. This measure reduces these impacts to less than significant.

g-i. According to the General Plan EIR (p. 2.2), no significant impacts from flooding are expected to result from development under the General Plan as result of existing policies and programs for flood protection that are in place.

j. Tsunamis are defined as sea waves created by undersea fault movement. The Specific Plan area is located inland from the Pacific Ocean, and would not be exposed to flooding risks from tsunamis. Seiches are known to have occurred during earthquakes, but none have been recorded in the Bay Area or in the Central Valley. The Specific Plan is in proximity to the Yosemite Lake Dam. However, the City of Merced does have ongoing programs in place to implement flood protection programs discussed in the General Plan (p. 14-51). Mudflows typically occur in mountainous or hilly terrain. The Specific Plan area and its surrounding areas are relatively flat. As a result, the Specific Plan area would not be threatened by the likelihood of mudflows.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
IX. LAND USE AND PLANNING: *Would the project:*				
a. Physically divide an established community?			**X**	
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	**X**			
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				**X**

Discussion:

a. The Specific Plan area consists of a combination of residential, commercial, industrial, and agricultural land uses. The Specific Plan proposes additional residential, commercial, and industrial uses for the area that will not lead to physical division of an established community.

b. According to the General Plan EIR (p. 2.3), the General Plan, which is the overriding document for the Specific Plan, contains land use policies that address potential adverse impacts on land use and ensures that impacts to land use remain insignificant. The consistency of the Specific Plan with these land use policies will be addressed at a programmatic level in the EIR.

c. The Specific Plan area is not part of any adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other local habitat conservation plan. However, in June 2001, Merced County entered into an agreement with the University of California, the California Department of Fish and Game, and the U.S. Fish and Wildlife Service to develop a HCP/NCCP for Eastern Merced County, those unincorporated areas east and north of Highway 99 and those incorporated cities that choose to participate. The HCP/NCCP was expected to take at least 3 years to develop. The City of Merced is not a signatory to the planning agreement, but was participating in the process. The City would have had an option in the future of adopting the HCP/NCCP, but no decision on this issue has been made at this time. This HCP planning process has stopped without a plan, and it is uncertain whether or not this planning process will resume. Therefore, in any event, the Specific Plan will not conflict with any adopted HCP's.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
X. MINERAL RESOURCES: *Would the project:*				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				**X**
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				**X**

Discussion:

a-b. According to the City of *Merced Vision 2015 General Plan*, there are no Mineral Resource Zones (MRZ) as defined by the Surface Mining and Reclamation Act (SMARA) in the Specific Plan area.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
XI. NOISE: *Would the project result in:*				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			**X**	
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			**X**	
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			**X**	
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			**X**	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	**X**			
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				**X**

Discussion:

a. Development under the Specific Plan will result in an exposure of persons to increased noise levels for the Specific Plan area due to construction and activities and increased traffic. However, development proposed under the Specific Plan will be in compliance with the General Plan's policies and standards for acceptable noise levels. Commercial and Industrial land uses are proposed adjacent to the existing rail corridor and will be designed consistent with acceptable noise levels.

b. No unique air or groundborne vibrations will be associated with the project.

c-d. Development as a result of the Specific Plan will create an increase in permanent and temporary noise levels for the Specific Plan area due to increased traffic and construction activities. However, development proposed under the Specific Plan will be in compliance with the General Plan's policies and standards to ensure that acceptable noise levels are maintained.

e. The Specific Plan area is located within 2 miles of the Merced Municipal Airport and could therefore result in the exposure of persons to excessive noise levels. The 1999 Merced County Airport Land Use Compatibility Plan applies to this airport. Therefore, noise impacts related to the airport's operations will be addressed at a programmatic level in the EIR.

f. The project site is not located within the vicinity of a private airstrip.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
XII. POPULATION AND HOUSING:				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?		**X**		
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?		**X**		
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?		**X**		

Discussion:

a. As indicated in the General Plan EIR (p. 4.7.9), there is adequate development area in the General Plan area, where the Specific Plan area is located, to accommodate future urban growth demands beyond 2015. Therefore, this impact is identified as insignificant in the General Plan EIR.

b. The General Plan EIR (p. 4.7.9) indicated that development under the General Plan would not substantially deteriorate the availability of housing. Furthermore, the Specific Plan will actually provide for additional housing for the Specific Plan area.

c. The General Plan EIR (p. 4.7.9) indicated that development under the General Plan would not result in the displacement of substantial numbers of people. Therefore, this impact is identified as insignificant in the General Plan EIR.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
XIII. PUBLIC SERVICES: *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*				
a. Fire protection?		**X**		
b. Police protection?		**X**		
c. Schools?		**X**		
d. Parks?		**X**		
e. Other public facilities?		**X**		

Discussion:

a-e. As indicated in the General Plan EIR (p. 4.9.13), development under the General Plan would create demand for new and expanded public services and facilities. As identified in the EIR (p.2.8), Mitigation Measure 8-c calls for appropriate site design so as not to hinder efficient public service delivery, and Mitigation Measure 8-d requires that development projects pay City public facility impact fees. These mitigation measures reduce public services impacts to a less than significant level. Development under the Specific Plan will be in compliance with these mitigation measures.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
XIV. RECREATION:				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?		**X**		
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?			**X**	

Discussion:

a. The General Plan EIR (p. 4.10.7-8) acknowledges that development under the General Plan will create new demand on existing recreational facilities. However, the EIR also indicates that with the City requirements for parkland dedication and facility fees for new parks in place, this impact can be considered insignificant. Development under the Specific Plan will also be in compliance with these requirements.

b. Additional recreational facilities may be developed as a result of the Specific Plan. However, these recreational facilities will be developed in accordance with the recreational policies found in Chapter 7 (Open Space, Conservation & Recreation) of the *Merced Vision 2015 General Plan* .

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
XV. TRANSPORTATION/TRAFFIC: *Would the project:*				
a. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	**X**			
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	**X**			
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	**X**			
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	**X**			
e. Result in inadequate emergency access?			**X**	
f. Result in inadequate parking capacity?			**X**	
g. Conflict with adopted policies, plans, or programs supporting alternative trans-portation (e.g., bus turnouts, bicycle racks)?			**X**	

Discussion:

a-b. Development under the Specific Plan may cause a substantial increase in local traffic thereby resulting in a reduction in the Level of Service standards. The EIR will analyze the significance of these potentially adverse impacts at a programmatic level.

c. The Specific Plan area is located within 2 miles of the Merced Municipal Airport. Although land use designations have not been determined, it is not expected that land uses proposed by the Specific Plan will cause hazards. It is expected that the Merced County Airport Land Use Compatibility Plan will be used as a guide for future land uses in the Specific Plan. However, the EIR will address the application of the Merced County Airport Land Use Compatibility Plan for future land uses in the Specific Plan at a programmatic level.

d. As part of the Specific Plan, a circulation plan will be prepared that reduces traffic safety hazards that may currently exist in the Specific Plan area. A particular area of concern for the Specific Plan area is the intersection of Childs Avenue and Martin Luther King, Jr. Way. In addition to being addressed in the Specific Plan, this intersection, as well as other problematic roadways and intersections in the Specific Plan area will be addressed at a programmatic level in the EIR.

e. As part of the Specific Plan, a circulation plan will be prepared that improves roadway access for the Specific Plan area.

f. Parking spaces for all development types in the Specific Planning area will be provided in accordance with City requirements.

g. In accordance with Section 65454 of the State Government Code, the Specific Plan will be prepared to be consistent with the adopted General Plan policies supporting alternative transportation.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
XVI. UTILITIES AND SERVICE SYSTEMS: *Would the project:*				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?		X		
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	X			
e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g. Comply with federal, state, and local statutes and regulations related to solid waste?			X	

Discussion:

a. Mitigation Measure 2-a as found in the General Plan EIR (p. 2.5) requires that site-specific development proposals with direct discharge in the area's surface water system be subject to Best Management options to prevent surface water pollution. With this mitigation measure incorporated, this impact remains insignificant.

b. Based upon the level of development proposed under the Specific Plan, it is anticipated that a new or expanded water or wastewater treatment plant (WWTP) will be required. The City is currently preparing an EIR for expansion of the WWTP that will have the capacity to serve the development proposed in the Specific Plan. This action is consistent with the *Merced Vision 2015 General Plan* that identified the need for expansions to public service facilities to serve the land with in the adopted Specific Urban Development Plan (SUDP). The South Merced Specific Plan project is within the SUDP.

c. Proposed new or expanded drainage facilities resulting from development under the Specific Plan will be performed in accordance with Title 17, Chapter 17.48 (Flood Damage Prevention) of the Merced Municipal Code.

d. As required by Section 10910 of the California Water Code in accordance with CEQA Guidelines, a water supply assessment, to evaluate if the City's water supply is adequate to meet the project's water demands, will be conducted for the EIR.

e. Wastewater treatment service will be provided by the City of Merced.

f-g. Solid waste will be collected by the City of Merced and transported to landfills in the County that are operated by the Merced County Department of Public Works. Solid waste will be collected and transported in compliance with federal, state, and local statutes and regulations related to solid waste.

	Potentially Significant Impact	Adequately Addressed in EIR (SCH# 95082050)	Less Than Significant Impact	No Impact
XVII. MANDATORY FINDINGS OF SIGNIFICANCE				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		**X**		
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	**X**			
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	**X**			

Discussion:

a. The General Plan EIR (p. 2.6) contains the following mitigation measures to reduce this impact to a less than significant level:

- Mitigation Measure 3-a requires biological surveys for site-specific development proposals in order to minimize impacts to special-status species.
- Mitigation Measure 3-c requires development proposals to be mitigated in accordance with regulatory agency requirements for wetland protection.

b. Cumulative impacts will be discussed in the EIR at a programmatic level, in accordance with Section 15130 of the CEQA Guidelines.

c. The EIR will analyze the significance of these potentially adverse impacts at a programmatic level.

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent (see Exhibit A). A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

■ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature _____ Date _____

Bill King, Principal Planner

APPENDIX G

WATER RESOURCES ASSESSMENT

DRAFT SB 610 WATER SUPPLY ASSESSMENT
for
South Merced Specific Plan

Prepared for:
City of Merced, California
678 West 18th Street
Merced, California 95340

Prepared by:
URS Corporation
30 River Park Place West, Suite 180
Fresno, California 93720

January 2007

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1.0 Introduction

1.1 City of Merced, Location

The City of Merced, California is located in the Central San Joaquin Valley, approximately 100 miles south of Sacramento and about 50 miles equidistant from the cities of Fresno and on the south and Modesto on the north. As of 2005 the City boundaries encompassed 23 square miles and a resident population of approximately 74,000.

1.2 South Merced Specific Plan (SMSP) Area

The South Merced Specific Plan (SMSP) project area consists of 2,052 acres located in the southern portion of the City of Merced, south of the City's downtown core. Portions of the SMSP area lie within the City's current boundaries while other portions, though within the City's Specific Urban Development Plan (SUDP) boundaries are currently located within the County. Specific boundaries of the SMSP area are Childs Avenue on the north, State Highway 99 on the east, Mission Avenue/Dickenson Ferry Road on the south and the southern extension of West Street on the west (Figure 1).

The City of Merced is the sole purveyor of potable water within the City's boundaries. Service is provided by the City's Public Works Department, Water System Division, which is responsible for compliance with the City's water supply and conveyance standards, with any necessary water supply upgrades being funded by development proponents through the collection of impact fees pursuant to Government Code Sec. 66000 as codified in the City of Merced Municipal Code Sec. 17.62.050.

1.3 Purpose of the Water Supply Assessment (WSA)

This report provides information necessary to complete a Water Supply Assessment (WSA) for the SMSP project area. This WSA has been prepared pursuant to the requirements of Senate Bill 610 (Costa); Chapter 643, Stats. 2001) (SB 610), which requires public water agencies, parties or purveyors that supply or may supply water to certain proposed development projects to prepare a WSA for use by the city or county government in environmental documentation for such projects, pursuant to the California Environmental Quality Act (CEQA).

An SB 610 WSA is required for any "project" that is subject to CEQA and proposes residential development of more than 500 units and/or commercial development with more then 500,000 square feet of floor space. The SMSP meets the test of the SB 610 WSA requirement.

Preparation of this WSA relies upon information from numerous sources and planning documents listed in Section 1.4, most particularly the City's 2005 Urban Water

Management Plan (UWMP) which provides a comprehensive evaluation of water demands and supplies through a planning horizon extending to year 2030.

Of particular relevance is that the study area of the 2005 UWMP encompasses the South Merced Specific Plan area (Figure 1) which is contained with the City's SUDP boundaries (Figure 2). For purposes of developing the UWMP, the SUDP boundaries, with the addition of the UC Merced campus, were used to evaluate the City's future water demands and supplies.

1.4 Documents Relied Upon in Preparing this WSA

The following documents and reports, and their supporting materials, were relied upon in the preparation of this SB 610 WSA:

- Administrative Draft, South Merced Specific Plan, URS Corp., December 19, 2006
- Administrative Draft, South Merced Specific Plan EIR, URS Corp., December, 19, 2006
- Final Draft, 2005 Urban Water Management Plan, Brown and Caldwell, December 15, 2005
- Bulletin 118-2003, California Groundwater, California Department of Water Resources, 2003
- Merced Water Supply Plan Update, CH2Mhill, September 2001
- 2001 Merced Water Reuse Strategic Plan
- City of Merced, Specific Urban Development Plan (SUDP)
- Merced Groundwater Basin, Groundwater Management Plan, MAGPI, December 1997
- Merced Vision 2015 General Plan, City of Merced, 1997

2.0 Average/Normal Year, Single Dry Year and Multiple Dry Year Water Supply Assessment

2.1 Average/Normal Year

The current and projected sustainable water supply for the City's system during a normal water year is summarized in Table 1 (2005 UWMP). *"The Merced Sub basin is in a mild overdraft condition and a groundwater recharge program is being developed. The Merced Sub basin is the sole source of the City's current water supply. As stated in the 2005 UWMP the City water supply demands are expected to increase from 30,118 acre feet per year in 2005 to 55,677 acre feet per year in 2025"*.

1.1 Table 1
1.2 Normal Year Water Supply

Sustainable water supply	2005 (ac-ft/yr)	2010 (ac-ft/yr)	2015 (ac-ft/yr)	2020 (ac-ft/yr)	2025 (ac-ft/yr)
1.2.1.1 Surface water[a]	10	58	105	153	200
1.2.1.1.1.1 Groundwater[b,c]	31,000	37,000	42,000	49,000	56,000
Recycled water	0	0	0	0	0
Desalinated water	0	0	0	0	0
1.2.1.1.2 Total	31,010	37,058	42,105	49,153	56,200

a. The City and MID plan to phase in use of surface water from MID for landscape irrigation.
b. Water supply estimated based on projected water demands. Assumed groundwater supply can be sufficiently increased to meet water demands.
c. Production from newly installed Wells 15, 16, and 17 will increase incrementally to meet increased water demands. Wells 15 and 16 will be online in 2006.
Source: 2005 UWMP

2.2 Single-Dry Year

The projected single dry-year water supplies are provided in Table 2 (2005 UWMP). The projected supplies take into account expected changes to the water demand for the SMSP area by sector.

Table 2
Projected Single-Dry Year Water Supplies

Water supply sources	2005 (ac-ft/yr)	2010 (ac-ft/yr)	2015 (ac-ft/yr)	2020 (ac-ft/yr)	2025 (ac-ft/yr)
Total supply[a]	31,010	37,058	42,105	49,153	56,200
Percent of normal year supply	100%	100%	100%	100%	100%

[a] Production from newly installed Wells 15, 16, and 17 will increase incrementally to meet increased water demands. Wells 15 and 16 will be online in 2006.
Source: 2005 UWMP

2.3 Multiple Dry Years

This section excerpted from the 2005 UWMP projects the impact of a multiple-dry year period for each five-year period during the projection interval. Tables 3 through 6 provide an estimate of the projected multiple-dry year water supplies for each five-year period.

Table 3
Projected Multiple Dry-Year Water Supplies
Period Ending 2010

Water supply sources	2006 (ac-ft/yr)	2007 (ac-ft/yr)	2008 (ac-ft/yr)	2009 (ac-ft/yr)	2010 (ac-ft/yr)
Total supply[a]	32,220	33,429	34,639	35,848	37,058
Percent of normal year supply	100%	100%	100%	100%	100%

[a] Production from newly installed Wells 15, 16, and 17 will increase incrementally to meet increased water demands. Wells 15 and 16 will be online in 2006.
Source: 2005 UWMP

Table 4
Projected Multiple Dry-Year Water Supplies
Period Ending 2015

Water supply sources	2011 (ac-ft/yr)	2012 (ac-ft/yr)	2013 (ac-ft/yr)	2014 (ac-ft/yr)	2015 (ac-ft/yr)
Total supply[a]	38,077	39,077	40,086	41,096	42,105
Percent of normal year supply	100%	100%	100%	100%	100%

[a] Production from newly installed Wells 15, 16, and 17 will increase incrementally to meet increased water demands. Wells 15 and 16 will be online in 2006.
Source: 2005 UWMP

Table 5
Projected Multiple Dry-Year Water Supplies
Period Ending 2020

Water supply sources	2016 (ac-ft/yr)	2017 (ac-ft/yr)	2018 (ac-ft/yr)	2019 (ac-ft/yr)	2020 (ac-ft/yr)
Total supply[a]	43,515	44,924	46,334	47,743	49,153
Percent of normal year supply	100%	100%	100%	100%	100%

[a] Production from newly installed Wells 15, 16, and 17 will increase incrementally to meet increased water demands. Wells 15 and 16 will be online in 2006.
Source: 2005 UWMP

Table 6
Projected Multiple Dry-Year Water Supplies
Period Ending 2025

Water supply sources	2021 (ac-ft/yr)	2022 (ac-ft/yr)	2023 (ac-ft/yr)	2024 (ac-ft/yr)	2025 (ac-ft/yr)
Total supply[a]	50,562	51,972	53,381	54,791	56,200
Percent of normal year supply	100%	100%	100%	100%	100%

[a] Production from newly installed Wells 15, 16, and 17 will increase incrementally to meet increased water demands. Wells 15 and 16 will be online in 2006.
Source: 2005 UWMP

2.4 2025 Water Supply Reliability

This section describes the reliability of the water supply and it vulnerability to seasonal or climatic shortages. According to the 2005 UWMP "*A water supply reliability comparison is made in Table 7 for the year 2025, considering three water supply scenarios: average/normal water year, single-dry water year, and multiple-dry water years.*

Although groundwater levels have declined at a greater rate during drought periods, the annual quantity of groundwater available does not vary significantly in relation to wet or dry years. The reliability does not change due to seasonal or climatic shortages and groundwater quality is assumed to be generally unaffected by short-term drought conditions.

Groundwater is a consistent, reliable, source so no replacement plan is needed. However, the city and MID are cooperating on a long-range plan to stabilize groundwater levels and investigating the potential of recharge with imported surface water from the Merced River. The city has adequate groundwater supplies to provide water during single-dry and multiple-dry years".

1.3 Table 7
Water Supply Reliability for 2025

Sustainable water supply	Normal year (ac-ft/yr)	Single-dry year (ac-ft/yr)	Multiple-dry years		
			Year 1 (ac-ft/yr)	Year 2 (ac-ft/yr)	Year 3 (ac-ft/yr)
Surface water	200	200	200	200	200
Groundwater	56,000	56,000	56,000	56,000	56,000
Recycled water	0	0	0	0	0
Desalinated water	0	0	0	0	0
Total	56,200	56,200	56,200	56,200	56,200
Percent of normal year supply	100%	100%	100%	100%	100%

Source: 2005 UWMP

3.0 Existing Water Supplies

3.1 Groundwater

3.1.1 Review of the 2005 UWMP

The City's 2005 Urban Water Management Plan study area encompasses the SMSP area, the subject of this WSA. The SMSP area is within the City's SUDP boundaries, the City's ultimate growth boundary over the life of the Merced Vision 2015 General Plan. For purposes of developing the UWMP the SUDP boundaries, with the addition of the UC Merced campus, were used to evaluate the City's future water demands and supplies. The UWMP planning period

extends through year 2030 with the study's conclusion being that "water supplies available to the City's customers are adequate over the next 20 year planning period".

3.1.2 Groundwater Basin Description

The City of Merced and the SMSP area overlie the Merced sub-basin (DWR Basin No. 5-22.04) encompassing a total of approximately 491,000 acres (767 square miles). The sub-basin (Figure 3) is generally described as bounded by the Merced River on the north, the Chowchilla River on the south, the Merced/Mariposa county line on the east and the San Joaquin River on the west. Groundwater levels are generally shallow with the predominate flow direction being from northeast to southwest. Within the sub-basin groundwater pumping creates localized cones of depression and irrigation with surface water may cause localized mounding creating complex groundwater flow patterns.

On average water levels over the entire basin declined nearly 30 feet between 1970 and 2000, a long tern average of 1 foot per year. Groundwater levels fluctuate significantly on an annual basis due to drought induced reductions in surface water deliveries. Water levels do however rebound rapidly following a return to normal (non-drought) hydrologic conditions. Longer term declines are noted as being the result of increased groundwater pumping by agriculture, which constitutes an estimated 95% of total estimated pumping in the Basin, in response to improved irrigation practices that do not lend themselves to the use of surface water. Groundwater levels also fluctuate seasonally with the highest levels normally occurring in the spring with the deepest levels in the late summer or fall.

Groundwater quality is generally defined as good with the highest quality along the basin's eastern boundary. Water quality degrades due mostly to salinity to the west with the lowest quality areas being found near and along the valley trough.

Natural recharge of the basin, estimated at 47,000 AF per year, occurs primarily in areas along the Merced, San Joaquin and Chowchilla Rivers. Other lesser recharge areas are found along Owens, Bear, Deadman, Farhens, Parkinson, Dutchman, Dry and Canal Creeks. Artificial recharge facilities are being developed and utilized as part of joint agreements between the City, Merced Irrigation District (MID) and others developed and implemented under the Merced Groundwater Basin, Groundwater Management Plan.

Neither the Merced sub-Basin, nor the San Joaquin valley, are adjudicated and California Department of Water Resources (2003) concluded that the Merced sub-Basin <u>is not</u> in a significant state of overdraft.

3.1.3 City of Merced Groundwater Pumping, Last 5 Years

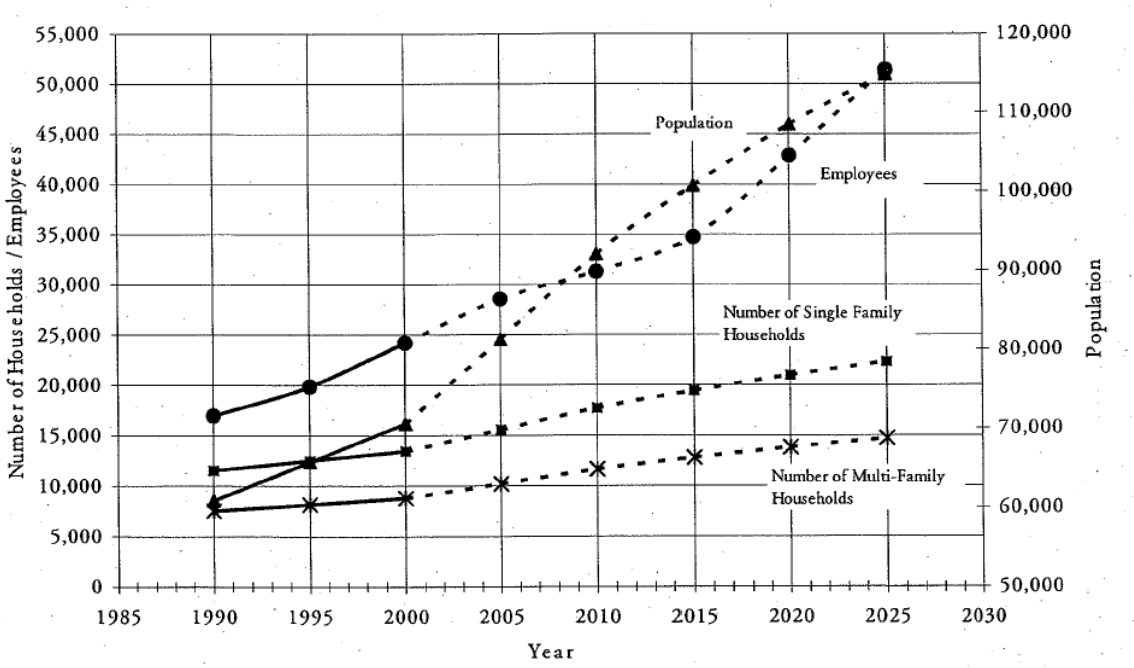
Groundwater is currently the only source of water supply utilized by the City with all water produced (pumped) and delivered assumed to be consumptively used. A map showing locations of City wells is provided in the 2005 UWMP (Figure 4).

Actual annual well production for the years 1978 – 2003 and estimates of projected pumping in 2004 and 2005 are presented in Table 8. The build up in demand and associated well production follows the City's population growth presented in Figure 5 (from the 2005 UWMP) which extends these population projections through 2025, within the build out period of the SMSP area.

Table 8
City of Merced
Annual Well Production
Acre-Feet/Year

2001	**23,633**
2002	**23,659**
2003	**22,428**
2004	**23,779**
2005	**30,118**
Average	**24,723**

Table 9
Historical and Projected Population, Housing and Employment within the SUDP (excluding UC Merced)



Source: 2005 UWMP

3.1.4 Description of Groundwater to be pumped for the SMSP area

Groundwater to be pumped to meet the demands of the SMSP area will be derived from areas within the City. The well citing and production rates and conveyance facility locations will be determined by the City during detailed development planning stages within the SMSP area.

According the 2005 UWMP as of December 2005 the City had 49,500 gallons-per-minute (gpm) of pumping capacity with 2 additional wells, providing a combined 6,000 gpm of capacity scheduled to become operational in 2006. Given the City's ability to add additional wells as demands increase there is no foreseeable limitation on the City's ability to meet water demands in the SMSP area.

3.1.5 Sustainability of Existing Groundwater Supplies

The City is a signatory to the Merced Groundwater Basin, Groundwater Management Plan (GWMP) and its implementing Memorandum of Understanding (MOU) adopted by the City December 19, 1997. The GWMP and the MOU recognize the importance of groundwater to the area's future growth and sets forth a series of goals and objectives to maintain high quality groundwater and restore groundwater to 1999 levels. This joint effort by agencies within the sub-basin provides for development of strategically located recharge facilities utilizing Merced River water, reducing the reliance on groundwater for irrigation and implementation of urban and agricultural water conservation measures. Signatories to the MOU, which includes the City and MID, are implementing and refining the GWMP's goals and objectives to ensure the long term sustainability of groundwater not just within the City but within the entire Merced sub-Basin.

3.2 Additional Water Supplies

Ongoing implementation of the GWMP and MOU provides for preserving and protecting groundwater quality and restoration of groundwater levels to 1999 levels without importation of water from outside the Merced groundwater basin.
As such no additional imported supplies are necessary to meet the demands of the SMSP area.

3.3 Water Recycling

Two types of wastewater, municipal wastewater and process water, are treated by the City and have been and will continue to be recycled for multiple uses. Data presented in the 2005 UWMP, Table 9, represents that following upgrading the City wastewater treatment plant to tertiary treatment level and incrementally increasing its capacity, all wastewater estimated to be generated through 2025 will meet recycled water standards with the use of such treated wastewater being expanded to include park and landscape irrigation plus other uses to be determined in the future.

Table 10
Wastewater Collection and Treatment in SUDP

Year	SUDP wastewater ADWF (excluding UC Merced) (ac-ft/yr)	UC Merced campus ADWF[a] (ac-ft/yr)	SUDP total wastewater ADWF (ac-ft/yr)	Quantity that meets recycled water standard[b] (ac-ft/yr)
2005	9,742	157	9,898	0
2010	10,866	678	11,544	11,544
2015	11,794	1,019	12,813	12,813
2020	12,716	1,330	14,046	14,046
2025	13,532	1,676	15,208	15,208

Source: Wastewater flow calculation methodologies and estimates from *Merced Water Reuse Strategic Plan* (CH2Mhill, 2001b).
ADWF = Average dry weather flow
[a] Assumes UC Merced campus has only office commercial and no industrial or retail commercial
[b] Upgrade to tertiary treatment scheduled for completion in 2008.
Source: 2005 UWMP

4.0 Determination of Adequcy of SMSP Area Water Supply

Future water supplies for the SMSP project area and cummulative development with the SUDP area would consist of groundwater pumping from the Merced groundwater Sub-basin. According the DWR the Merced Sub-basin is in a mild state of overdraft. However the City working jointly with MID and others have developed a groundwater management plan (GWMP) the goals and objecives of which include restoring and preserving groundwater at 1999 levels through a combination of actions previously described.

The estimated water demand for the SMSP area was included in analyses conducted as a part of the 2005 UWMP, the 2001 Merced Water Supply Plan Update and the City of Merced, Specific Urban Development Plan analyses. With onging implementation of the recommendations in these Plans the City will be able to meet its future water demands and support the broader basin-wide objectives. Therefore, future water supplies would be adequate to meet the water demands of the SMSP area

Figure 1
South Merced Specific Plan
Location Map

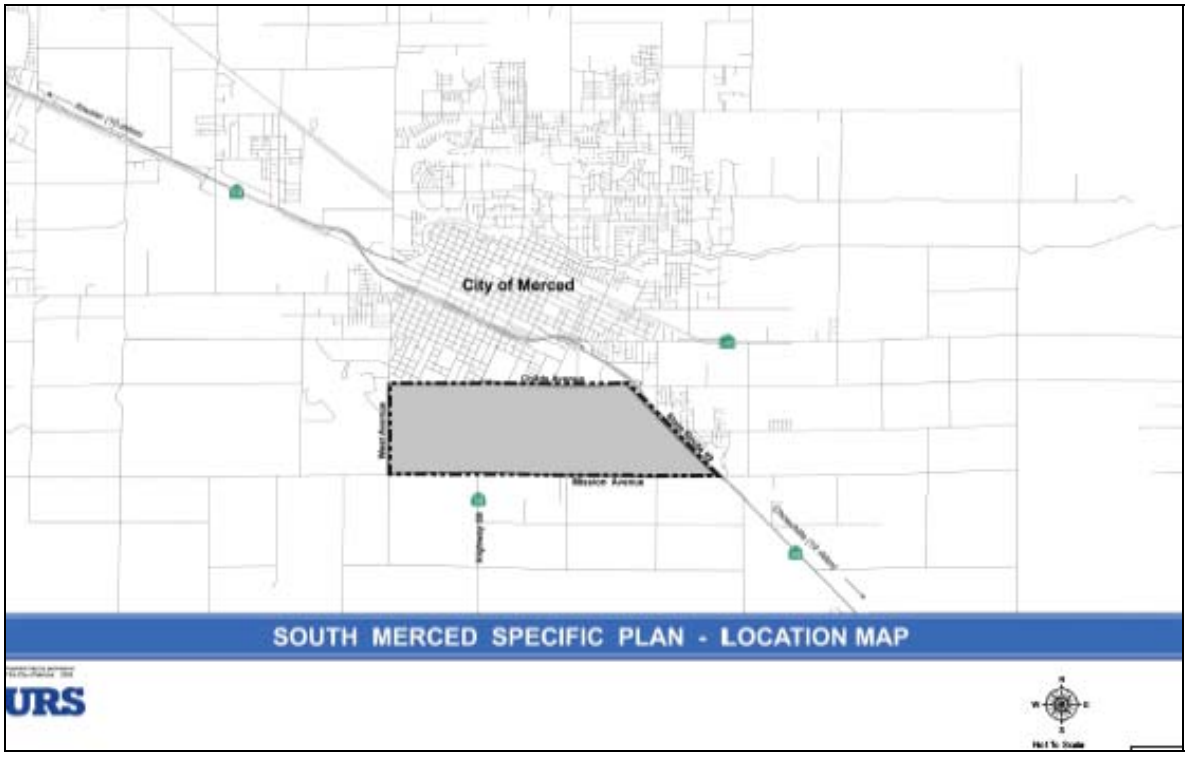


Figure 2
South Merced Specific Plan Area
Within the Specific Urban Development Plan

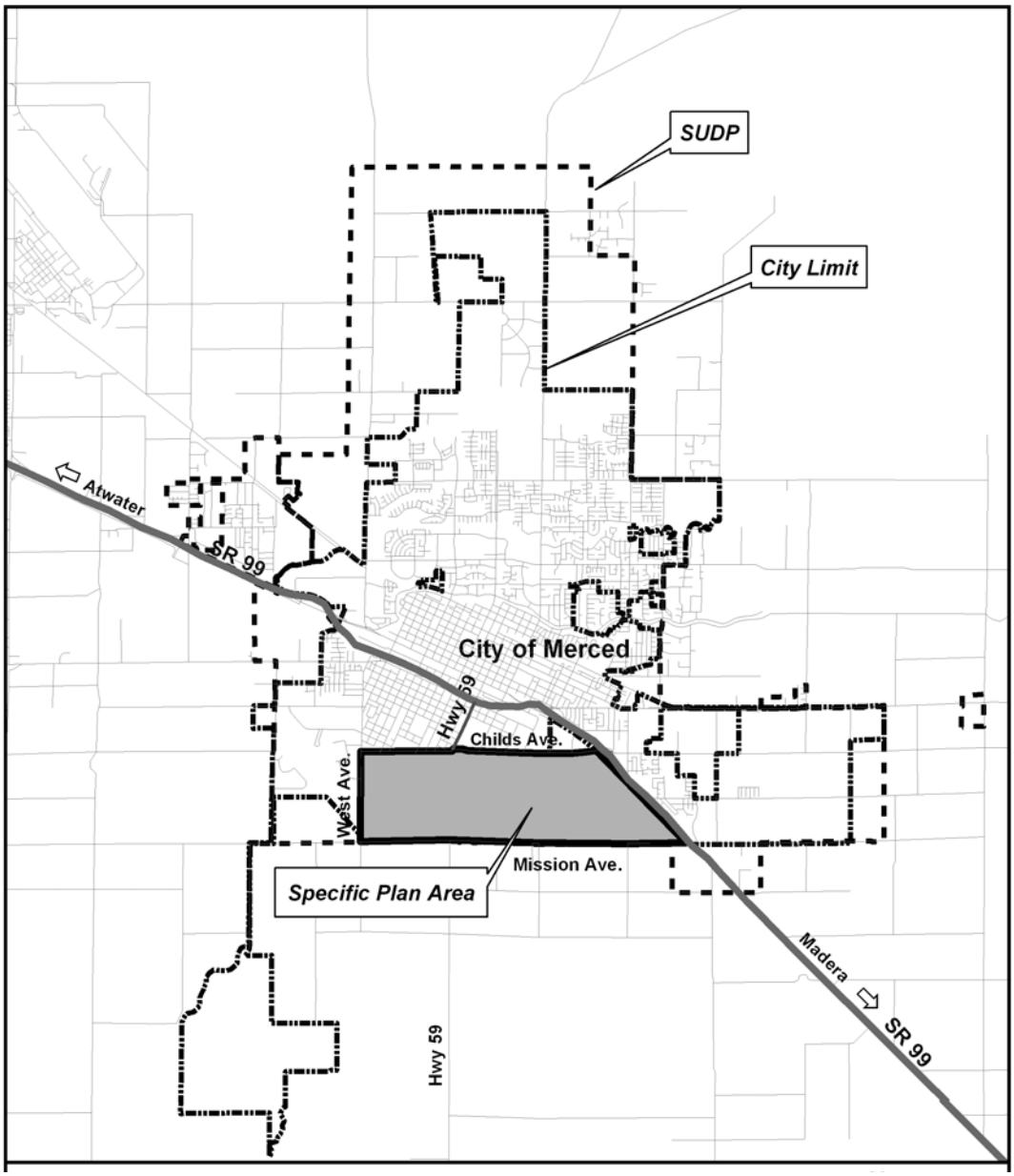
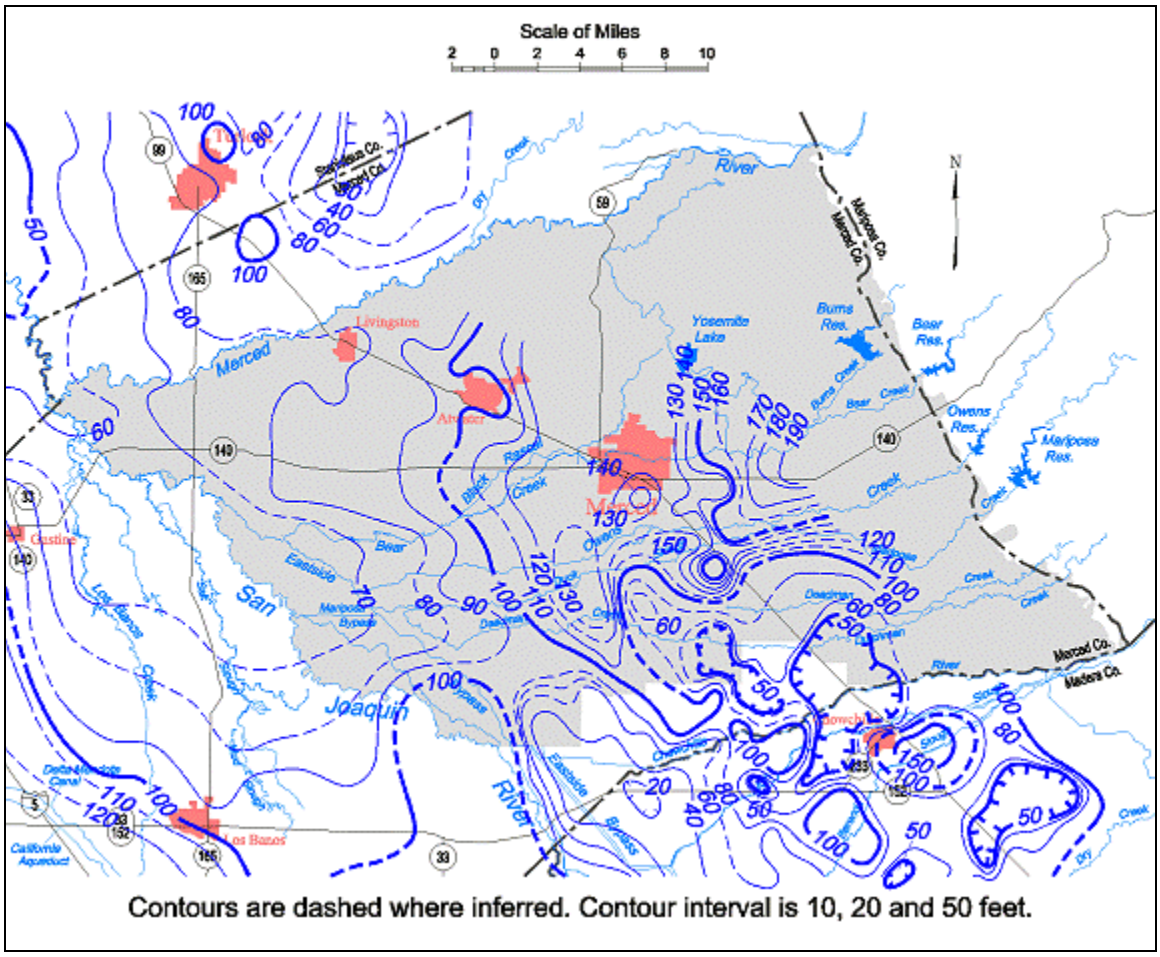
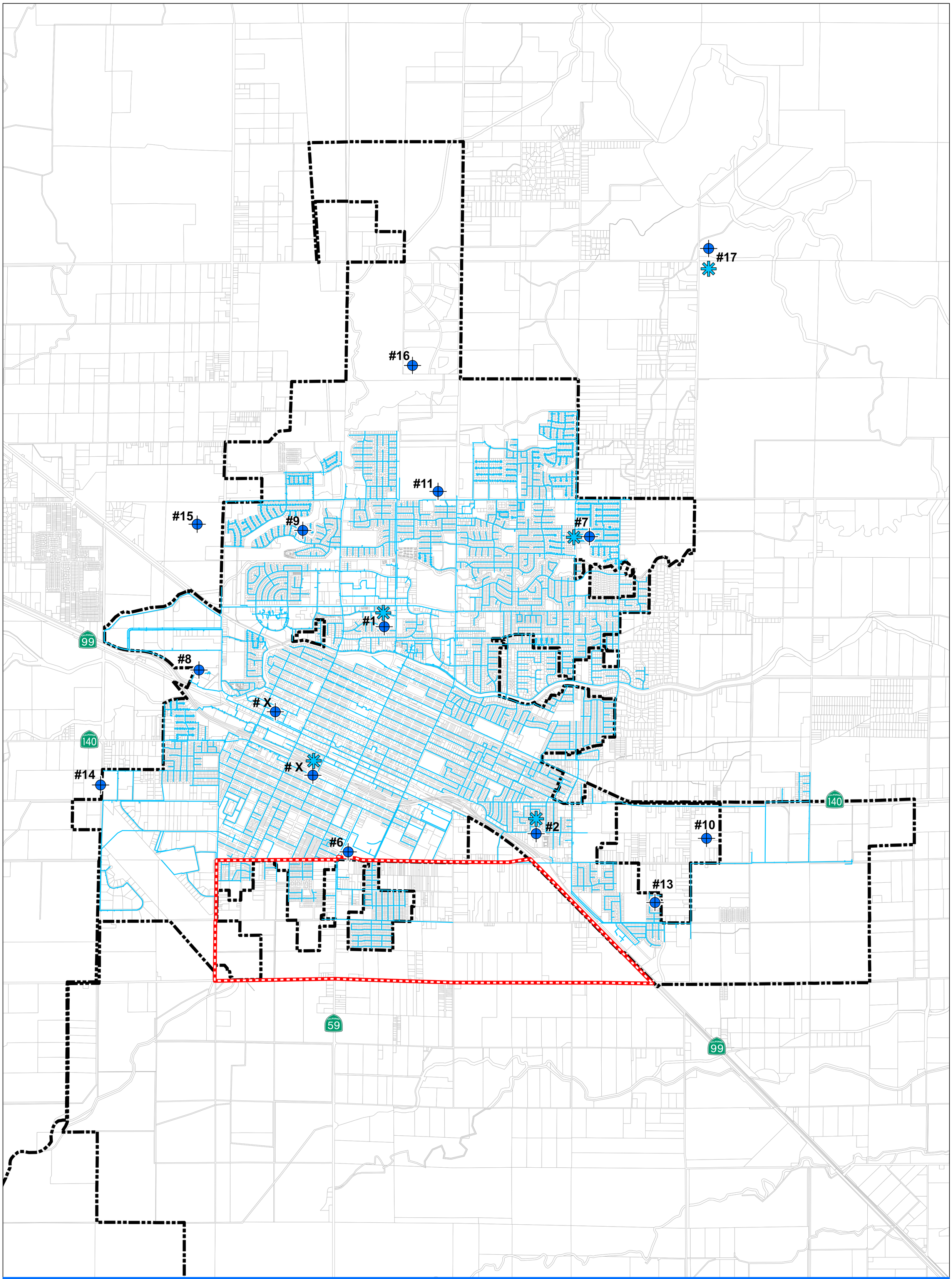


Figure 3
Merced sub-basin (DWR Basin No. 5-22.04)
Spring 2004, Lines of Equal Elevation, Unconfined Aquifer



Source: DWR Bulletin 118-2003



SOUTH MERCED SPECIFIC PLAN - WATER FACILITIES DIAGRAM

Prepared map by permission of the City of Merced. 2005.

URS

December 12, 2006

LEGEND

- WATER LINES
- #2 WELL SITE AND NUMBER
- ELEVATED STORAGE TANK AT WELL SITE
- SOUTH MERCED SPECIFIC PLAN
- MERCED CITY LIMITS
- PARCELS

N W E S

0 2,000 4,000 Feet

Figure 4

1.4 References

1. Administrative Draft, South Merced Specific Plan, URS Corp., December 19, 2006

2. Administrative Draft, South Merced Specific Plan EIR, URS Corp., December, 19, 2006

3. Final Draft, 2005 Urban Water Management Plan, Brown and Caldwell, December 15, 2005

4. Bulletin 118-2003, California Groundwater, California Department of Water Resources, 2003

5. Merced Water Supply Plan Update, CH2Mhill, September 2001

6. 2001 Merced Water Reuse Strategic Plan

7. City of Merced, Specific Urban Development Plan (SUDP)

8. Merced Groundwater Basin, Groundwater Management Plan, MAGPI, December 1997

9. Merced Vision 2015 General Plan, City of Merced, 1997

APPENDIX H

HAZARDS AND HAZARDOUS WASTE

This script opens a separate window for reporting data errors

Query Results

City Name: Merced
State Abbreviation: ca

LIST OF EPA-REGULATED FACILITIES IN ENVIROFACTS

To see a report on a facility click on the underlined Facility Name. Click on the underlined "View Facility Information" link to view EPA Facility information for the facility.

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FACILITY NAME/ADDRESS	FACILITY INFORMATION	Permitted Discharges to Water?	Toxic Releases Reported?	Hazardous Waste Handler?	Active or Archived Superfund Report?	Air Releases Reported?
99 GARAGE 810 14TH OST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
A 1 CONCRETE 1890 E GERARD MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
A&B AUTO SVC 47 E MOE LANE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
ARVIN SANGO INC 1891 WARDROBE AVE MERCED, CA 95348	View Facility Information	NO	**YES**	NO	NO	NO
ARVIN SANGO INC.	View Facility	NO	**YES**	NO	NO	NO

2525 COOPER AVE MERCED, CA 95348	Information					
AUTO TECH 1672 W 13TH STREET MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
B&O SPEED & MARINE 1029 J ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
BALTIMORE AIRCOIL COMPANY INCORPORATED 3058 BEACHWOOD DRIVE MERCED, CA 95348	View Facility Information	NO	**YES**	**YES**	NO	NO
BARROSO BROTHERS DAIRY 6930 EAST LE GRANDE MERCED, CA 95340	View Facility Information	**YES**	NO	NO	NO	NO
BRENDELLA BOATS INC 2556 W. 16TH ST. MERCED, CA 95348	View Facility Information	NO	**YES**	NO	NO	NO
BURLINGTON NORTHERN AND SANTA FE RR CO 2401 H ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
BUTTON TRANSPORTATION INC 1056 E CHILDS AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
C&S MTRS SVC 254 W 16TH ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
CAL TRANS 1801 MOTEL DR MERCED, CA	View Facility Information	NO	NO	**YES**	NO	NO

95340						
CALAVERAS MATERIALS 12523 NORTH HIGHWAY 59 MERCED, CA 95340	View Facility Information	NO	NO	NO	NO	**YES**
CALIFORNIA CANNERS & GROWERS HWY 140 & KIBBY RD NW CORNER MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
CALIFORNIA HWY PATROL 1800 E CHILDS AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
CD SPECTRUM INC 2047 GROGAN AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
CENTRAL VALLEY CONCRETE INC 3371 NORTH HIGHWAY 59 MERCED, CA 95344	View Facility Information	NO	NO	**YES**	NO	NO
CIRCLE K STORE #3618 1460 YOSEMITE PKWY MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
COCA COLA MERCED 1414 W 13TH ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
CONDELLS RADIATOR 1640 W 13TH ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
CONTINENTAL FORMS INC 2001 GROGAN AVE	View Facility Information	NO	NO	**YES**	NO	NO

MERCED, CA 95340						
COSTCO NO 142 1445 R ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
COUNTY OF MERCED HOUSEHOLD HAZARDOUS WASTE 6040 N HWY 59 MERCED, CA 95340-	View Facility Information	NO	NO	NO	NO	**YES**
COURTESY AUTOMOTIVE CENTER 1485 W 15TH ST MERCED, CA 953400000	View Facility Information	NO	NO	**YES**	NO	NO
COURTESY OLDS & CAD INC 19TH & CANAL ST MERCED, CA 95341	View Facility Information	NO	NO	**YES**	NO	NO
CREATIVE TOUCH INTERIORS NO HDFL 0096 3379 G ST MERCED, CA 95344	View Facility Information	NO	NO	**YES**	NO	NO
CROWN CORK & SEAL COMPANY INCORPORATED 4315 E CHILDS AVE MERCED, CA 95340	View Facility Information	NO	**YES**	**YES**	NO	NO
DANA EXUM TRUCKING 270 S PARSONS AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
DONJEAN RUG AND UPHOLSTERY CLEANERS 1664 WEST THIRTEEN TH STREET MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO

EQUILON ENTERPRISES 1245 R ST MERCED, CA 953400000	View Facility Information	NO	NO	**YES**	NO	NO
FINELINE INDUSTRIES INCORPORATED 455 GROGAN AVE. MERCED, CA 95340	View Facility Information	NO	**YES**	**YES**	NO	**YES**
FOREST FREEZE TRUCKING 1498 E MERCED AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
FRANK MESA TRANSPORTATION 3322 DENVER WAY MERCED, CA 95348	View Facility Information	NO	NO	**YES**	NO	NO
FRANKS AUTO 1290 W CARDELLA RD MERCED, CA 95348	View Facility Information	NO	NO	**YES**	NO	NO
FREEMANVSONS BODY SHOP 1621 D STREET MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
GARCIAS HYDRAULIC REPAIRS 2130 WARDROBE AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
GARRISON ARCO OLIVE & 6TH ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
GENERAL ELECTRIC COMPANY 1715 NORTH KIBBY ROAD MERCED, CA 95340	View Facility Information	**YES**	NO	**YES**	NO	NO
GOODYEAR	View Facility	NO	NO	**YES**	NO	NO

MERCED 1625 T ST MERCED, CA 95340	Information					
GREIF BROTHERS CONTAINERS 2400 COOPER AVENUE MERCED, CA 95344	View Facility Information	NO	**YES**	**YES**	NO	**YES**
HAPPY AUTO THE 1790 YOSEMITE PKWY MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
HARRISONS AUTO BODY 320 STATE HWY 51 MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
HELENA CHEMICAL CO 50 E REILLY RD MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
HUNTSMAN FILM 386 N TOWER RD MERCED, CA 95340	View Facility Information	NO	**YES**	**YES**	NO	NO
HUSSMAN CORPORATION 1900 WARDROBE AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
J D TRUCKING 3752 CHUKAR CT MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
JAMES J STEVINSON CORP 24507 W FIRST AVE MERCED, CA 95340	View Facility Information	**YES**	NO	NO	NO	NO
JANS MARKET 5966 EAST STATE HWY 140 MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
JOHN ROTH	View Facility	NO	NO	**YES**	NO	NO

CHEVROLET WEST MAIN & U STS MERCED, CA 95340	Information					
JONES PAINTING BODY & GLASS 1009 J ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
JT WEST INC 3510 W SANDY MUSH RD MERCED, CA 95341	View Facility Information	**YES**	NO	NO	NO	NO
KAESS TIRE & BRAKE 1261 18TH & T ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
KELLER ALUM PCDTS-CA 1800 GROGAN AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
KITS CAMERAS 1 HOUR NO 42 244 MERCED MALL MERCED, CA 95348	View Facility Information	NO	NO	**YES**	NO	NO
LEE JONES TRUCKING 3828 HATCH RD MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
M SIMONE RACHERS 2813 S ARBOLEDA DR MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MALIBU BOATS WEST INC 1 MALIBU COURT MERCED, CA 95340	View Facility Information	NO	**YES**	NO	NO	**YES**
MALIBU BOATS WEST INCORPORATED 1861 GROGAN AVENUE	View Facility Information	NO	**YES**	NO	NO	NO

MERCED, CA 95340						
MCAULEY MOTORS 744 W MAIN ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MCLANE PACIFIC 3876 CHILDS AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED AUTO SERVICE 1260 16TH ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED AUTOBODY & DETAIL 1254 W 16TH MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED CALIPER 1515A M ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED CHRYSLER PLYMOUTH 1600 W MAIN ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED CITY OF GROGAN & AW AVE MERCED, CA 95341	View Facility Information	NO	NO	**YES**	NO	NO
MERCED CITY SCHOOL DIST 2105 WARDROBE AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED CITY SCHOOLS 2604 K ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED CO AGRI COMM 15TH & G ST	View Facility Information	NO	NO	**YES**	NO	NO

MERCED, CA 95340						
MERCED CO ROADS DEPT THORNTON RD MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED CORP YARD CITY CORNER OF GROGAN & LN AVE MERCED, CA 95341	View Facility Information	NO	NO	**YES**	NO	NO
MERCED COUNTY FARM SUPPLY CO 674 STATE HWY 59 MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED COUNTY PUBLIC HEALTH SERVICE 260 EAST 16TH STREET MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED CT MRI MEDICAL GROUP 1240D ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED GOLD COUNTRY CLUB 6333 N GOLF RD MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED HONDA 1775 V STREET MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED LAUNDRY 160 W MAIN MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED SERVICE CENTER 560 W 15TH MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
MERCED SUN STAR	View Facility Information	NO	NO	**YES**	NO	NO

3033 N G ST MERCED, CA 95340						
MERCED SURGICAL AND DIAGNOSTIC CTR 3303 NORTH M ST MERCED, CA 95348	View Facility Information	NO	NO	**YES**	NO	NO
MERCED, CITY OF, WWTF BIOSOLIDS SITES 10260 GOVE ROAD MERCED, CA 95340	View Facility Information	**YES**	NO	NO	NO	NO
MODINE AFTERMARKET HOLDINGS INC 2777 NORTH STATE HIGHWAY 59 MERCED, CA 95344	View Facility Information	NO	**YES**	**YES**	NO	NO
N & S TRACTOR COMPANY 600 STATE HWY 59 MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
ONE HOUR MARTINIZING 2828 G STREET MERCED, CA 95340-	View Facility Information	NO	NO	**YES**	NO	NO
ONE HOUR MOTOPHOTO 1248 N OLIVE AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
PACIFIC BELL 440 18TH STREET MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
PACIFIC BELL 3191 M STREET MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
PACIFIC BELL 1913 GROGAN AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO

PACIFIC BELL 1612 W FIFTEEN ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
PACIFIC BELL 1202 W FIFTEEN ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
PACIFIC BELL 750 LOUGHBOROUGH DR MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
PACIFIC BELL 3185 M ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
PACIFIC BELL BLDG FIRST HUNDRED FIFTY SECON MERCED, CA 95342	View Facility Information	NO	NO	**YES**	NO	NO
PACIFIC BELL RED TOP MICROWAVE STATION MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
PACIFIC BELL 19TH STREET MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
PARKER TRUE VALVE HARDWARE 1305 W 18TH ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
PARKWAY CLEANERS 1530 YOSEMITE PARKWAY MERCED, CA 95340	View Facility Information	NO	NO	**YES**	**YES**	NO
PENSKE TRUCK LEASING CO LP 251 W 11TH ST MERCED, CA	View Facility Information	NO	NO	**YES**	NO	NO

95340						
PENSKE TRUCK LEASING L P 400 W CHILDS AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
PEPSI BOTTLING GROUP 1 WEST AVENUE MERCED, CA 95340	View Facility Information	NO	**YES**	NO	NO	NO
PETES AUTO BODY 1020 MARTIN LUTHER KING JR WAY MERCED, CA 953406045	View Facility Information	NO	NO	**YES**	NO	NO
PG&E WILSON SUB STATION STATE HIGHWAY 140 MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
PRESTIGE STATIONS INC NO 5412 3100 G STREET MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
QUEBECOR WORLD 2201 COOPER AVENUE MERCED, CA 953480000	View Facility Information	NO	**YES**	**YES**	NO	**YES**
R ST ONE HOUR MARTINIZING 1818 R ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
RALEYS NO 309/359 3550 N G ST MERCED, CA 95348	View Facility Information	NO	NO	**YES**	NO	NO
RANCHERS TRACTORS 1486 STATE HWY 59 MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO

RAZZARI FORD 2330 CANAL ST MERCED, CA 95341	View Facility Information	NO	NO	**YES**	NO	NO
RBJ TRANSPORT INC 1735 N ASHBY RD MERCED, CA 95348	View Facility Information	NO	NO	**YES**	NO	NO
RED ROCK RANCH 7440 EAST STATE HWY 140 MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
RICH'S AUTO BODY INC 923 J STREET MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
ROCK SHAR 3157 E SANDY MUSH RD MERCED, CA 95340	View Facility Information	**YES**	NO	NO	NO	NO
RON SMITH BUICK 1330 W 18TH ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
ROTH CHEVROLET W 17TH ST & U ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
RUDIS GERMAN CAR SERVICE 1530 W 17TH STREET MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
SCHOLLE CORPORATION 2500 COOPER AVE MERCED, CA 95348	View Facility Information	NO	NO	**YES**	NO	NO
SEARS UNIT # 6460 1011 WEST OLIVE AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
SHELL OIL CO 1405 J ST	View Facility Information	NO	NO	**YES**	NO	NO

MERCED, CA 95340						
SHERWIN-WILLIAMS CO 2232 G ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
SIMPSON'S CLEANERS 618 W MAIN STREET MERCED, CA 95340	View Facility Information	NO	NO	**YES**	**YES**	NO
SMOTHERS SHELL 55 W 16TH ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
STAHL A DIV OF SCOTT FETZER 1130 STUART DRIVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
SUNSHINE CENTER CLEANERS 1227 W MAIN ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
TAVARES FAMILY #3 1192 E GERARD AVE MERCED, CA 95340	View Facility Information	**YES**	NO	NO	NO	NO
TAZZ EXPRESS 3757 PIGEON CT MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
TEXACO SERVICE STATION 1107 W OLIVE MERCED, CA 95348	View Facility Information	NO	NO	**YES**	NO	NO
THE HOME DEPOT NO 6618 1735 HIGHWAY 140 MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
TOMS BICYCLE	View Facility	NO	NO	**YES**	NO	NO

SHOP 237 W 17TH ST MERCED, CA 95340	Information					
TONY J MACHADO DAIRY 2242 SOUTH HEALY RD MERCED, CA 95340	View Facility Information	**YES**	NO	NO	NO	NO
TOSCO NORTHWEST CO NO 11162 190 W OLIVE ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
TOSCO NORTHWEST CO NO 11164 655 E MAIN ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
TOUAR CYCLE WORK 2001 YOSEMITE PARKWAY MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
TRI VALLEY GROWERS PLANT M 1700 KIBBY ROAD AND HIGHWAY 140 MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
TRIPLE A DAIRY 1876 SOUTH HEALY ROAD MERCED, CA 95340	View Facility Information	**YES**	NO	NO	NO	NO
U HAUL 1247 J ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
UNILEVER BESTFOODS NORTH AMERICA 1785 ASHBY ROAD MERCED, CA 95344	View Facility Information	NO	**YES**	**YES**	NO	**YES**
UNION PACIFIC RAILROAD	View Facility Information	NO	NO	**YES**	NO	NO

1555 D ST MERCED, CA 953400000						
UNITED PARCEL SERVICE 334 S HIGHWAY 59 MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
VALLEY PONTIAC GMC HONDA 1520 W MAIN ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
VALLEY PONTIAC GMC HONDA 17TH & Q ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
WALGREENS 4415 3098 G ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
WALGREENS NO 3330 1640 R ST MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
WELLMADE PRODUCT 1715 KIBBY RD MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
WESTERN FARM SERVICE MERCED 265 N. ARBOLEDA DR. MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
WINTON DISPOSAL INC 3111 N FRANKLIN RD MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
WORLD OIL COMPANY 1244 J STREET MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO
XAVIER CATTLE - HOLSTEINS	View Facility Information	**YES**	NO	NO	NO	NO

2892 N GURR RD MERCED, CA 95348						
YOSEMITE WHOLESALE CO 2674 E VASSAR AVE MERCED, CA 95340	View Facility Information	NO	NO	**YES**	NO	NO

Go To Top Of The Page

Total Number of Facilities Displayed: 149